ESTABLISHED IN 1873

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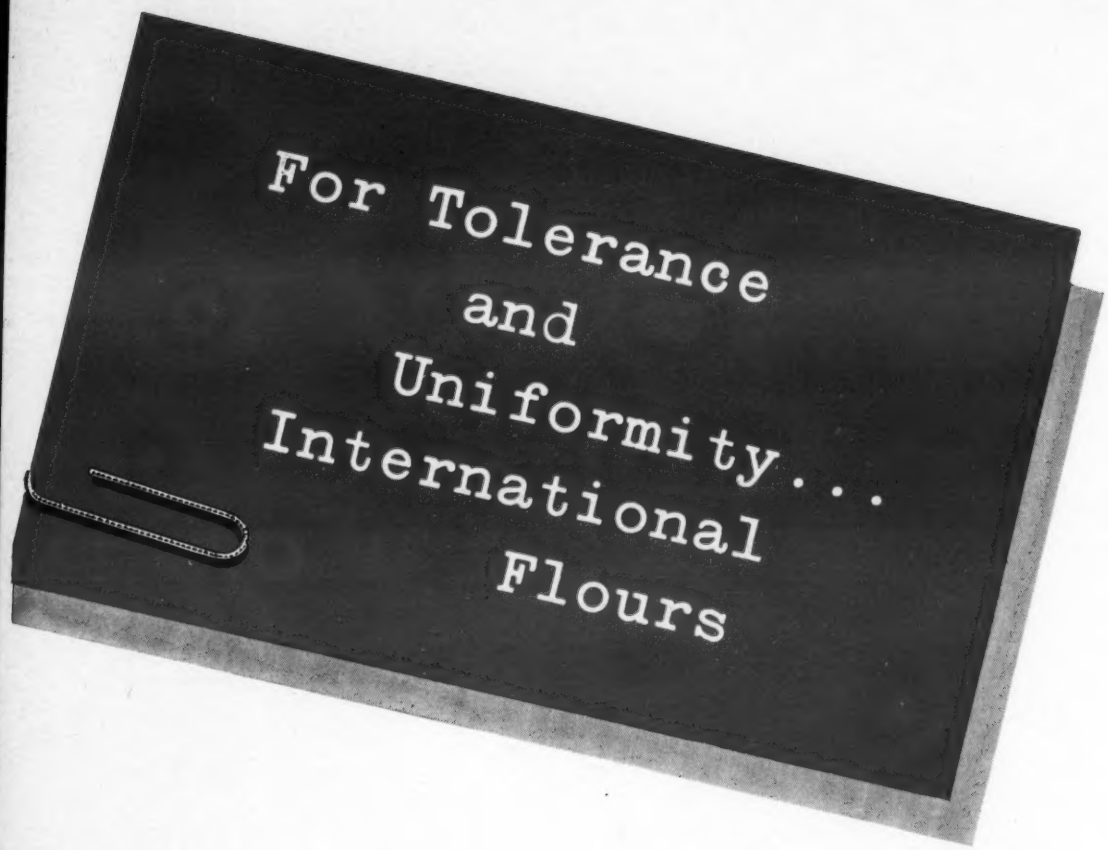

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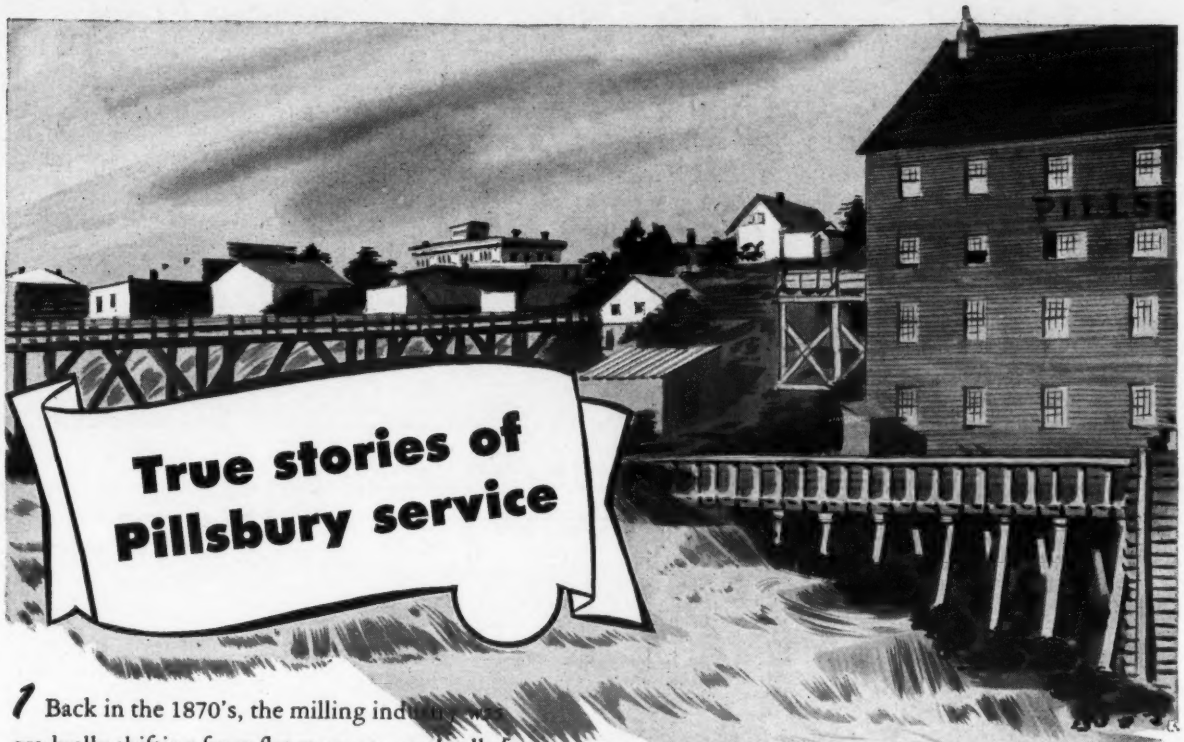

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1 Back in the 1870's, the milling industry was gradually shifting from flat stones to steel rolls for grinding wheat. Charles A. Pillsbury, founder of the Pillsbury business, was one of the first to see the possibilities of the rolls and to install some of them; but instead of accepting them uncritically, he subjected them to exhaustive tests to see if they could be improved. An old historical article says:

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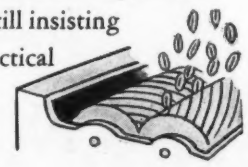
3 Largely because of what was learned in these experiments, Mr. Pillsbury successfully equipped one of his mills for complete roller operation —while many millers were still insisting that rolls would never be practical except for the first coarse grinding of the wheat.



4 The determination to find the *best possible ways* of producing the *best possible flour* has been characteristic of the Pillsbury organization from its earliest days to the present moment. It is one of the major elements in the dependable service that Pillsbury has been rendering to bakers for so many years.

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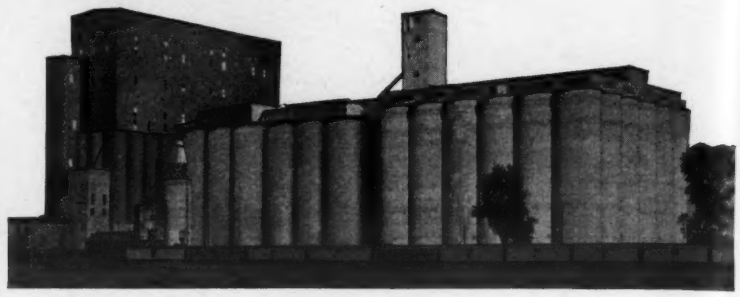

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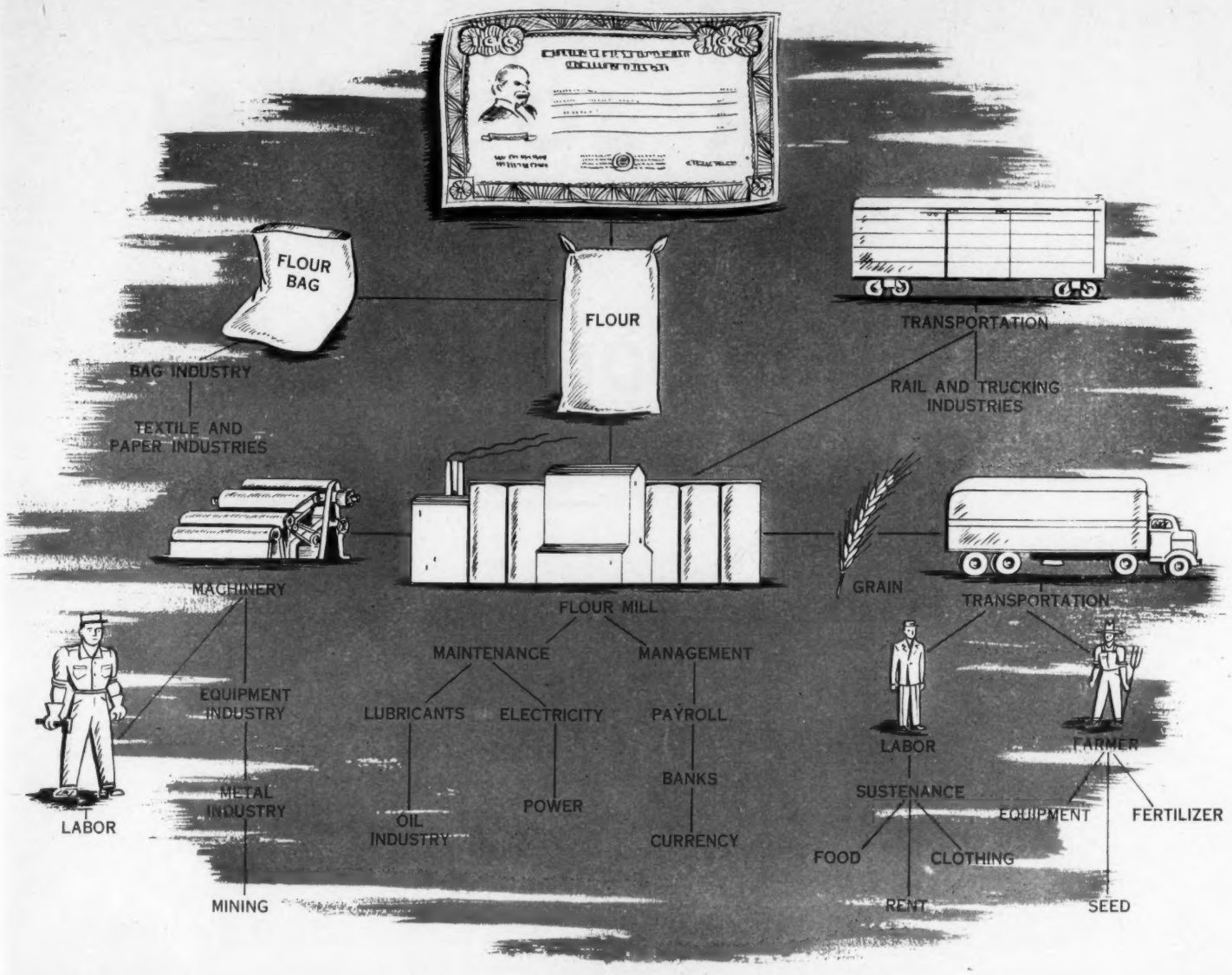

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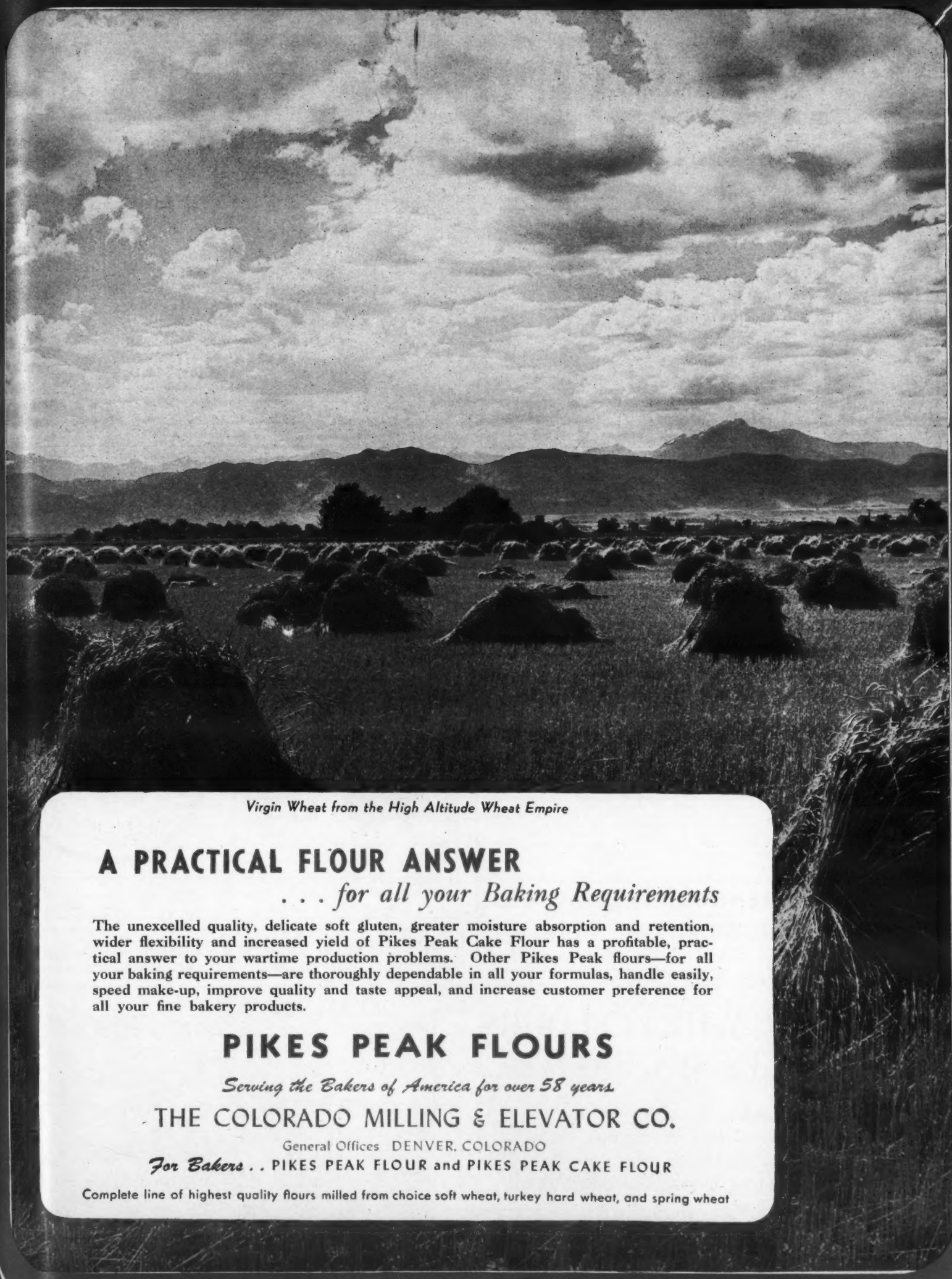

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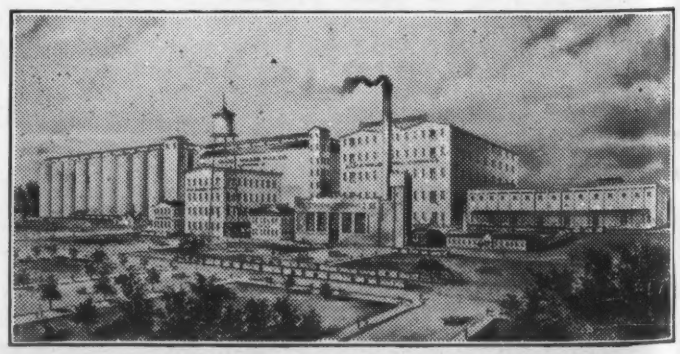

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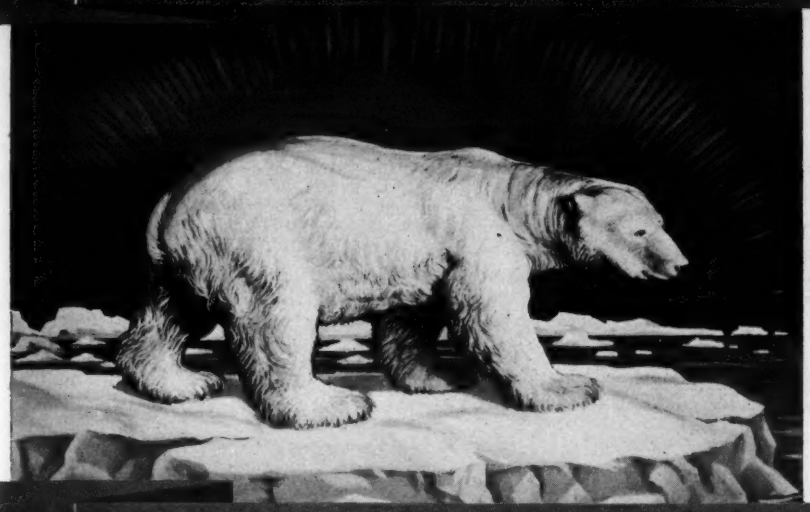

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Wheat Prospects Hit All-Time High

MORE THAN 1,000,000,000 BUS OF WINTER AND SPRING EXPECTED

Big Surprise as Government Places Spring Wheat Estimate Nearly 100,000,000 Bus Above Recent Private Figures—Oats and Barley Production Better Than Average

WASHINGTON, D. C.—The largest wheat crop on record for the United States, more than 1,000,000,000 bus, is in prospect this year on the basis of conditions on June 1, according to the June report of the Department of Agriculture. The report indicated 714,148,000 bus of winter wheat and 320,637,000 bus of spring wheat, a total of 1,034,785,000 bus. While the estimate of winter wheat production is sharply higher than a month ago, the big surprise is in the spring wheat estimate. Private estimates just recently placed the spring wheat outturn at 225,000,000 bus.

Only once before in the history of the United States has a crop of 1,000,000,000 bus been attained, in 1915, when production was 1,003,637,000 bus. The crop last year was 836,000,000 bus and in 1942 was 974,000,000 bus.

The indicated record breaking crop is the result of bumper crops for both winter wheat and spring, but not record breaking for either kind of wheat separately. This year's indicated winter wheat production of 714,148,000 bus has been exceeded twice, in 1919 and 1931, the record being 825,000,000 bus in 1931. The forecast for spring wheat of 320,637,000 bus has been topped in five earlier years, in the 1910's and 1920's the largest of which was 368,000,000 in 1915.

A month ago the government indicated a winter wheat crop of 662,275,000 bus and last year's harvest was 529,606,000 bus. Outlook for this crop has improved progressively since it was seeded under unfavorable moisture conditions last fall, as the Dec. 1 forecast was 527,000,000 bus and the April 1 suggestion was 602,000,000 bus, and timely and plentiful precipitation was the reason for this.

The indicated winter wheat yield of 17.4 bus per harvested acre is a comparatively high yield, although exceeded in 1942 by the record yield of 19.7 bus and in two other earlier years. The yield of spring wheat, as indicated by June 1 condition and weather to date, is 16.2 bus per seeded acre, which ranks high in the record of previous years, although exceeded in each of the last three years.

It must be recognized, however, that a crop that is at the pinnacle this early in the season is more than usually vulnerable to hazards that may develop between now and harvest. This is especially true this year because of the lateness of the season which exposes the crop longer to the weather hazards of hot winds and losses before harvesting if growth becomes too rank. The moisture supply is in general very favorable for carrying the crop through to harvest; the exceptions are in New Mexico where the deficiency since last fall has not been overcome, and in the Pacific Northwest, where better than average rains during June will be needed. The sections of the plains that started poorly last fall because of dry seed beds have had May weather that tended to improve thin stands, and encourage keeping some fields that otherwise would not have been harvested. The southern plains states—Texas, Oklahoma and up into Kansas—had May rains that added materially to their production. May moisture relieved somewhat the critical situation in the dry section of Oklahoma. In Nebraska, however, the outlook continues poor. The wheat that came up in the spring is making slow growth, and abandonment is still going on. There are some reports of lodging where growth is rank. Rust has not developed to any noticeable extent, and storm damage to date is limited to the flood losses in evidence a month ago.

Spring wheat yields per seeded acre, indicated by June 1 condition and the weather to that date, were applied to the prospective acreage as published in March, with some adjustments for changes in farmers' plans caused by the heavy rains at planting time in parts of the spring wheat belt, and for spring wheat seeded on abandoned winter wheat ground in some states, particularly in Montana. Such reseedings, however, are expected to be less than a year ago.

The department sees promise of better than average oats and barley crops, and while there is no official appraisal of corn crop prospects in June, trade reports indicate that a big acreage has been planted and that the crop is making rapid growth after a late start.

Production of oats is forecast at 1,193,410,000 bus. At this figure the current crop would exceed the 1943 production by 49,543,000 bus or about 4% and would be 165,130,000 bus or 16% larger than the 10-year (1933-42) average of 1,028,280,000 bus.

Spring seeding of oats was probably delayed more than that of any other crop. Although seeding was delayed greatly in some states, warm weather and an abundance of sunshine during the last half of May brought excellent growing conditions. The present moisture situation is generally favorable. As a result, oats is expected to overcome much of the handicap of a late start, except in Nebraska and Missouri and in other limited areas where some abandonment of the crop is indicated.

RYE OUTLOOK JUNE 1

Indicated 1944 production of rye as of June 1 was 31,608,000 bus, compared with 30,781,000 bus in 1943 and 40,446,000 bus for the 10-year (1933-42) average. If present prospects are realized, this year's crop, except for 1943, would be the smallest since 1936 when, owing to the widespread drouth, production declined to 24,239,000 bus. There was some improvement in the prospective yield an acre in May, largely in Minnesota, the Dakotas and Nebraska, the principal rye producing states.

A 300,000,000-bu barley crop is in prospect as of June 1. While 7% less than in 1943 this production would exceed by 7% the tentative figure of 280,000,000 based on March prospective acreage and the 1937-41 average yield. Most of the improved prospects are the result of a better than average condition of the crop for June 1, reported at 82% compared with 78 a year ago and the 10-year average of 77.

In practically every state currently estimated yields exceed the 10-year average and in the major producing west north central and great plains states, with the exception of Nebraska, the margin is wide. The crop has reached maturity throughout most of the South and Southwest with harvesting under way as far north as Virginia and Oklahoma and in California. The fall sown crop wintered well, to which new hardy varieties contributed. The growing season was favorable in most of the southern areas and prospects have improved steadily to date.

In the states east of the Mississippi River present prospects indicate an abundant production of oats. Despite delayed seeding in some of the northern states, the June 1 condition of the crop in nearly all these states points to yields which will average well above those of 1943 and the 10-year (1933-42) average. Much the same situation prevails in the southern and southwestern states. Prospective yields in most of the western states are above the 10-year (1933-42) average, but generally below the yields of 1943.

The newer varieties of rust and disease resistant oats were utilized as seed to a much greater extent this season, especially in the north central states. The greater part of the oats acreage in Wisconsin and Iowa was seeded to these varieties. In most other north central states they were used on 20 to 50% of the acreage. As a result the yield expectancy in this area is considerably enhanced especially if rust should be experienced.

Indicated production of winter wheat in leading states, in thousand bushels, with comparisons:

	June 1	May 1	Final 1943
Ohio	45,990	43,946	26,433
Indiana	27,240	25,340	15,184
Illinois	25,840	25,194	16,665
Michigan	22,090	21,620	11,084
Missouri	23,400	22,620	12,649
Nebraska	45,390	39,338	60,165
Kansas	174,640	158,268	144,201
Oklahoma	73,872	64,638	31,711
Texas	61,095	52,949	36,366
Montana	19,703	18,544	21,919
Idaho	15,550	15,550	12,192
Colorado	13,262	13,266	29,381
Washington	39,494	41,013	23,691
Oregon	17,885	17,885	12,870

Preliminary estimate of all spring wheat production in leading states in thousand bushels, with comparisons:

	June 1	Final 1943	Average 1932-41
Minnesota	18,547	15,936	20,017
North Dakota	160,409	154,156	71,875
South Dakota	46,425	30,159	19,682
Montana	45,824	52,416	27,083

Indicated production of oats in leading states, in thousand bushels, with comparisons:

	June 1	Final 1943	Average 1932-41
Ohio	42,620	29,424	40,067
Indiana	36,630	33,212	39,632
Illinois	114,723	113,091	118,010
Wisconsin	109,402	100,347	75,418
Minnesota	160,896	142,791	134,072
Iowa	155,524	184,012	181,024
Missouri	30,844	51,750	38,452
North Dakota	66,136	70,924	32,028
South Dakota	89,869	70,500	39,268
Nebraska	32,362	71,676	38,715
Kansas	32,683	47,424	35,093

Farm stocks of rye on hand June 1 were 6,431,000 bus, or about 21% of the 1943 production of 30,781,000 bus. Present farm stocks of rye are only about one third of the stocks on hand a year ago and slightly less than two thirds of the nine-year (1934-42) average June 1 farm stocks of 10,146,000 bus.

About 18% of the 1943 barley crop, equivalent to 58,679,000 bus, remained on farms on June 1, 1944. This quantity is 39% less than a year earlier, but is about a third more than the 1934-42 average for the same date. Half of these farm stocks are in North Dakota and South Dakota and Minnesota. If those of Wisconsin, Nebraska, Kansas, Montana, Idaho and Colorado are added, these nine states account for more than five sixths of the total farm stocks of barley. Disappearance from farms since Dec. 1, 1943, was about 119,000,000 bus, compared with 175,000,000 in the same period a year earlier, from a much larger crop.

——BREAD IS THE STAFF OF LIFE——

Duty Free Wheat Imports Opposed

WASHINGTON, D. C.—In view of the heavy domestic wheat crop estimates, opposition has developed in congressional circles over the Holmes Bill to extend until Dec. 18 the duty free exemption on feed grains and wheat quotas. Opposition centers around the lifting of wheat quotas and proponents of the measure say that they believe it will be necessary to drop this feature of the bill to gain congressional approval. While officials will not admit a policy of acting to strengthen wheat prices, trade representatives say that numerous recent actions appear designed for that purpose.

Ways and Means Committee hearings on this bill are expected soon, and when finally started it is likely that the wheat quota exemption provision will be dropped.

ABA BOARD OF GOVERNORS TO CONVENE AT CHICAGO

CHICAGO, ILL.—Ralph D. Ward, chairman, has announced that an important meeting of the board of governors of the American Bakers Association will take place in Chicago June 22-23 at the Drake Hotel. It is expected that there will be a large attendance of governors. Members of the American Bakers Association and the industry are asked to send suggestions to governors, either branch or region, to the chairman, or to the headquarters office in Chicago with respect to subjects that should be considered by the board at this meeting.

APRIL FLOUR PRODUCTION DROPS CLOSE TO 1943 IN CENSUS REPORT

Gain of Only 1% Over Previous Year Sustained — Crop Year Cumulative Figure Now 3.1% Above Preceding Season— Millfeed Production at Low Point for Year

As previously indicated, April was a slow month for flour production. The total output for that month amounted to 17,714,445 sacks, the Bureau of the Census report just issued indicates. This was a 1% gain over the corresponding month of 1943, when the total was 17,587,039.

May was a somewhat better month. Weekly reports of mills to THE NORTHWESTERN MILLER suggest a total of about 18,920,000 sacks for that month.

So far this crop year, production has totaled 198,818,322 sacks, a gain of 3.1% over the corresponding 10 months of the preceding crop year when the total milled was 192,787,984 sacks.

Rate of operations for April averaged 61.9% of capacity, compared with 64.7% in March and 59.2% a year ago. So far in the crop year the percentage of activity has averaged 68.5, against 66.3 in the same part of the preceding crop year.

Wheat ground during April amounted to 40,972,352 bus, compared with 40,667,699 a year ago. In addition, mills producing granular flour used 3,697,372 bus of wheat in April.

Cumulative wheat use in the 10 months of the current crop year is roughly 14,000,000 bus greater for food uses and an additional 20,000,000 bus extra for granular flour, a total increase of 34,000,000 bus.

Yields showed an improvement in April, the figure being 138.8 lbs of wheat per sack of flour, against 139.1 in March and 138.7 a year ago. For the crop year, the average is 139.1, identical with the ratio of the previous crop year.

Production of millfeed in April hit a low point of 350,901 tons, compared with 396,829 in the preceding month. The total exceeded a year ago when the outturn was 346,517 tons. However, the millfeed output from granular flour was smaller in April this year, amounting to 31,645 tons, compared with 44,204, so that over-all millfeed production declined from a year ago and was at the lowest point for the crop year.

Mills were getting a little more millfeed per sack of flour in April, the ratio being 39.6 lbs, against 39.4 a year ago.

Mills in the largest capacity class continued to gain relative to the other groups and accounted for the increase in production over a year ago, as has been the case throughout most of the crop year. The 2,000-sack per day capacity group produced 78.1% of the total April production, compared with 75.6% a year ago. There were five more mills in the group this year.

Kansas continued its position as the largest flour producer, turning out 15.6% of the total production, against 15.9% in March and 15.6% a year ago. New York was in second place with 13.5%, the same as in the preceding month and a gain over the 11.1% reported a year ago. Minnesota was third with 11.5%, 11.9% and 12.5%, respectively.

Missouri in fourth place showed a percentage of 7.6, compared with 7.5 in March and 8.5 a year ago. Texas remained 6.5%, the same figure as last year, and Illinois accounted for 5.4%, against 5.3% a year ago. Other changes were minor.

The April figures were collected from 853 concerns operating 975 mills, of which 952 plants accounted for 93.4% of the total wheat flour production as shown in the 1939 biennial census of manufactures. In April, 97 mills with a daily capacity of 40,107 sacks were idle.

CENSUS REPORT ON FLOUR AND FEED OUTPUT

The Department of Commerce announces statistics on wheat ground and wheat milling products by months. These returns include only mills which are now manufacturing at the rate of 9,800 or more sacks of flour annually.

For April, 1944, 853 companies report 975 mills, of which 97, with daily capacity of 40,107 sacks, were idle. Of the 975 mills which reported detailed production data at the biennial census of manufactures, 1939, 952 accounted for 203,884,598 sacks, or 93.4% of the total wheat flour, 218,282,705 sacks, reported for that year.

The wheat ground averaged 138.8 lbs per sack of flour in April, 139.1 in March, 139.3 in February, 139.5 in January, 1944, 139.1 in December, 1943, 138.9 in November, 138.8 in October, 138.8 in September, 139.4 in August, 138.9 in July, 138.4 in June and 138.5 in May, 1943.

The offal reported amounted to 39.6 lbs per sack of flour in April, 40.0 in March, 39.9 in February, 40.2 in January, 1944, 39.9 in December, 1943, 39.7 in November, 39.6 in October, 39.4 in September, 40 in August, 39.4 in July, 39.1 in June and 39.2 in May, 1943.

Month and year	Mills reporting	Production: Wheat ground, bus	Production: Wheat flour, sacks	Production: Offal, lbs	Daily wheat flour capacity, sacks	Lbs wheat per sack of flour	Pct. of total capacity operated
1944—							
January	981	52,063,318	22,400,359	901,486,003	1,135,807	139.5	78.9
February	981	46,441,265	20,009,677	799,385,527	1,136,739	139.3	73.3
March	977	46,019,888	19,846,083	793,659,144	1,136,919	....	64.7
April	975	40,972,352	17,714,445	701,801,527	1,144,498	138.8	61.9
1943—							
May	1,022	35,482,034	15,390,996	603,658,505	1,140,567	138.3	54.0
June	1,018	37,892,935	16,432,618	643,083,843	1,140,595	138.4	55.4
July	1,013	40,053,355	17,299,595	682,256,842	1,133,644	138.9	58.7
August	1,001	42,827,642	18,435,411	736,985,055	1,141,226	139.4	62.1
September	998	45,565,340	19,703,069	776,800,088	1,137,924	138.8	63.3
October	995	48,689,821	21,043,910	832,679,499	1,137,628	138.8	71.6
November	994	48,698,529	21,033,409	835,600,406	1,137,119	138.9	67.0
December	994	49,462,543	21,332,364	852,056,132	1,138,162	139.1	72.1

COMPARATIVE STATEMENT FOR 768 IDENTICAL MILLS†

March—	Production: Wheat ground, bus	Production: Wheat flour, sacks	Production: Wheat offal, lbs	Daily wheat flour capacity, sacks	Lbs of wheat per sack of flour	Lbs of offal per sack of flour	Per ct. of capacity operated
1944	40,132,169	17,364,803	686,484,943	1,074,322	138.7	39.5	64.7
1943	39,783,829	17,219,615	676,667,553	1,058,237	138.6	39.3	62.6
1942	35,614,079	15,268,569	617,815,133	1,032,985	140.0	40.5	56.8
1941	39,152,128	16,910,735	675,637,319	1,018,910	138.9	40.0	63.8
1940	35,975,434	15,505,438	626,967,714	1,013,922	139.2	40.4	58.8

*GRANULAR FLOUR

1944—	Mills reporting	Wheat ground, bus	Granular flour, sacks	Offal, lbs
January	28	3,352,118	1,402,649	61,094,512
February	29	3,270,846	1,399,963	56,267,120
March	30	3,662,093	1,576,802	63,587,274
April	32	3,697,372	1,596,601	63,290,609
1943—				
May	43	4,859,106	1,823,214	114,906,252
June	45	5,636,532	2,051,461	133,744,872
July	37	3,536,496	1,332,362	78,876,416
August	30	3,329,254	1,335,943	64,822,887
September	31	2,988,834	1,250,328	54,106,608
October	28	2,754,777	1,174,174	48,292,909
November	25	2,357,269	998,217	42,037,447
December	28	2,603,201	1,098,653	46,330,388

*These figures not included in above production.

†These mills produced 199,082,773 sacks of the total wheat flour production (218,282,705 sacks) as shown by the returns of the biennial census of manufactures for 1939, and accounted for 98% of the wheat flour production reported for April, 1944 (17,714,445 sacks). During April, 1944, 53 mills, with capacity of 23,926 sacks, were idle.

BIRTHDAY PARTY

CHICAGO, ILL.—Milton P. Fuller's 65th birthday anniversary was celebrated here on June 12 with a dinner in the Union League Club attended by defendants and defense witnesses in the government's anti-trust trial. He was presented with a useful as well as ornamental fountain pen. Mr. Fuller, who is executive vice president of the Thomas Page Mill Co., Topeka, Kansas, has appeared on the stand frequently during the trial as a government witness. Although he has been chairman for many years of the Millers National Federation package differential committee he was not made a defendant because of the fact that he had appeared as a witness before the indicting grand jury.

—BREAD IS THE STAFF OF LIFE—

KENNETH L. FRUEN JOINS GMI FARM SERVICE STAFF

KANSAS CITY, MO.—Kenneth L. Fruen, who has been office manager for the Central Division Office of General Mills, Inc., Kansas City, for several years, is returning to the Minneapolis office as an assistant to the comptroller in the farm service division of the company. Replacing Mr. Fruen at Kansas City is J. C. Parker, formerly manager of the Great Falls office of General Mills.

APRIL FLOUR PRODUCTION

The following table shows production of flour in April, 1944, as reported by the Bureau of the Census, by states:

State	No. Mills	Wheat Ground Bus	Wheat Flour Sacks
Kansas	73	6,418,600	2,762,131
New York	28	5,414,449	2,389,481
Minnesota	40	4,657,214	2,034,861
Missouri	52	3,138,612	1,352,833
Texas	32	2,727,358	1,146,229
Illinois	35	2,190,363	958,828
Washington	17	2,363,746	1,037,513
Oklahoma	31	1,895,161	813,569
Ohio	65	1,565,356	669,929
Oregon	17	1,099,793	483,394
Nebraska	30	1,127,498	483,438
California	10	830,920	368,475
Tennessee	46	690,497	287,972
Iowa	9	774,975	327,745
Indiana	46	661,228	282,962
Kentucky	58	620,322	259,350
Michigan	36	618,443	254,646
Virginia	70	501,162	210,581
North Dakota	10	500,246	213,641
Montana	16	529,369	233,226
Colorado	18	497,667	221,212
Utah	18	462,857	205,549
Wisconsin	7	324,222	140,600
Pennsylvania	89	240,169	99,486
No. Carolina	32	274,480	115,331
Idaho	13	248,611	109,944
Maryland	22	138,640	57,709
Georgia	9	86,919	36,441
So. Carolina	8	31,178	13,012
W. Virginia	10	31,984	13,723
Other States	28	310,313	130,634
Total	975	40,972,352	17,714,445

GRANULAR FLOUR UP AGAIN DURING APRIL

Census Bureau Reports Output of 1,595,601 Sacks by 32 Mills—Greater Than Year Ago

Production of granular flour for war alcohol made a further moderate gain in April, the Bureau of the Census reports, the fifth consecutive month of advance.

Output amounted to 1,595,601 sacks, compared with 1,576,802 in March and 1,372,650 a year ago. The April figure was the best month's production since June, 1943, when a peak was reached.

Thirty-two mills, two more than in March, reported granular flour production. At the lowest point last November only 25 mills were engaged in this production and 45 was the top number last June. Ten mills in April were running exclusively on granular flour.

Mills ground 3,697,372 bus of wheat in April in producing this product and recovered 31,645 tons of millfeed. So far this crop year mills have used 31,531,958 bus of wheat for granular flour, against 11,574,035 in the previous year when the program was not in force for as many months.

April millfeed recovery was lighter than March, amounting to 31,645 tons. This also was a good deal less than a year ago when the figure was 44,204 tons. This slump meant a decline in the over-all production of millfeed for April, continuing the March trend. Apparently, mills are able to obtain more granular flour suitable for alcohol use than they were a year ago when they had less experience with the product.

The following table shows the record of granular flour production by months since the program was formally begun in 1943:

Month	No. Mills	Wheat Ground Bus	Granular Flour Sacks	Millfeed Tons
1944—				
April	32	3,697,372	1,595,601	31,645
March	30	3,662,093	1,576,802	31,793
Feb.	29	3,270,846	1,399,963	28,134
Jan.	28	3,352,118	1,402,649	30,547
1943—				
Dec.	28	2,603,201	1,098,653	23,165
Nov.	25	2,357,267	998,217	21,018
Oct.	28	2,754,777	1,174,174	24,146
Sept.	31	2,988,834	1,250,328	27,053
Aug.	30	3,299,254	1,335,943	32,411
July	37	3,536,496	1,332,363	39,238
June	45	5,363,532	2,051,461	66,872
May	43	4,859,106	1,770,293	57,453
April	40	3,762,109	1,372,650	44,204
March	35	3,866,545	1,419,316	45,037
Feb.	28	2,164,206	790,918	25,458
Jan.	18	1,781,175	648,093	21,099
1943 total		39,336,502	15,242,409	427,154

—BREAD IS THE STAFF OF LIFE—

E. E. PORTER JOINS SALES STAFF OF SHELLABARGER

SALINA, KANSAS.—E. E. Porter, well-known flour miller of the Southwest until he left the business a few years ago to engage in defense work, rejoins the industry shortly as divisional sales manager for Shellabarger Mill & Elevator Co., Salina, it was announced this week by Elmer Reed, vice president and general manager.

Mr. Porter replaces Austin Morton who resigned recently. He will handle sales in the central states, a trade he knows from his past milling sales experience.

For some time Mr. Porter was sales manager for H. D. Lee Flour Mills Co., Salina, and in 1936 he became manager of Wilson (Kansas) Flour Mills. For the last few years he has lived in Wichita.

COMMANDER AND A-D-M MERGE SOY DIVISIONS

Products Will Be Merchandized Through Larabee and Commander Milling Company Sales Organizations

MINNEAPOLIS, MINN.—The soy products division of Commander-Larabee Milling Co. has been merged with the Archer-Daniels-Midland Co., E. J. Quinn, vice president of the milling company, has announced.

The new division will start immediately merchandising a soy product under the trade name "Bakers' Nutrisoy," through the sales organizations of Larabee Flour Mills Co. of the southwest under the direction of E. D. English; and the sales organization of Commander Milling Co., of Minneapolis, under direction of Dwight K. Yerxa.

R. G. Brierley, former sales manager, has been made manager of the new soy products division; J. P. Holt, former salesman for Larabee Flour Mills Co., Kansas City, Mo., has been made sales manager of the southwest division with headquarters at Larabee Flour Mills Co. in Kansas City; H. J. Guernsey, former salesman for Commander-Larabee Milling Co., has been made sales manager of the northwest division with headquarters in Minneapolis; E. O. Paschke, Chicago representative for Archer-Daniels-Midland Co., has been made sales manager of the central division with headquarters in Chicago.

This merger is in recognition of the increasing importance of soy flour and soy products in the baking industry. It brings together all of the facilities of one of the oldest and largest soybean processors, and one of the oldest and largest millers in the country.

This new product has been custom-made for the baking industry and has been so developed that it can be used without any change in the baker's formula, the company states. It has been developed under the direction of Dr. J. W. Hayward, director of nutritional research for Archer-Daniels-Midland Co., and Ralph M. Bohn, director of the new food research laboratory of Archer-Daniels-Midland Co. and Commander-Larabee Milling Co. Miss Dorothy Zellers, home economist, and Max Gibson, technical service representative, are also working under Mr. Bohn's direction in providing service to the baking industry on soy products.

—BREAD IS THE STAFF OF LIFE—

50-Year Story of Kansas Milling Co. Told in Booklet

Fifty years ago Henry Lassen and Charles M. Jackman built a small mill at El Reno, Okla., with $15,000 capital, mostly borrowed money. They named the new 150-bbl mill the Canadian Milling Co.

Last week Kansas Milling Co., the direct descendant of the tiny parent mill, sent a handsome booklet to its friends telling the factual history of the company and showing in detail the multitude of activities the big Wichita company is now engaged in.

The story in the booklet tells how wheat was 30c bu back in the 1890's, how flour sold for $3 bbl instead of $3 bag, how in 1906 the founders felt there would be a bigger opportunity in Wichita and moved to that city, building the first Kansas Milling Co. 1,200-bbl mill and within three years expanding that to 1,700. Storage was built to house 300,000 bus. Three years later that was doubled.

By 1919, when Mr. Lassen, the president, died, Kansas Milling Co. had a daily capacity of 2,150 bbls and storage for 750,000 bus of wheat. The mill at St. John, Kansas, had been added to the properties.

Mr. Jackman then became president, and in four years the company had a milling capacity of 3,800 bbls and had added 1,000,000 bus to its storage space. In 1931 the malt plant was added to the mill, shortly after the baking and milling industries had discovered the need for controlled maltose values in flour.

C. M. Jackman died in 1933, and Ward Magill was then elected president with D. S. Jackman vice president and general manager. The company continued to grow. Today it has 28 country elevators, total storage capacity of about 3,500,000 bus, 500 bbls of daily soft wheat milling capacity at its Marion, Ohio, mill, 4,000 bbls capacity in Wichita, together with a malt plant tripled in capacity and a modern feed mill.

The beautifully illustrated booklet pictures the personnel, the properties, the company's many cereal products and by graphic use of a map shows the domestic and foreign markets served. The book, although patently a sales book that is designed to show customers an intimate picture of the company and its people, really gives the reader a graphic illustration of this company's participation in the amazing half century growth of the milling industry in the Southwest.

—BREAD IS THE STAFF OF LIFE—

SULLIVAN & SULLIVAN

"Excuse me, what did you say your name was?" interrupted Judge Philip L. Sullivan as one of the witnesses for the defense in the trial of the anti-trust suit of the government against flour millers was placed on the stand in federal district court at Chicago last week.

"Sullivan, Betty Sullivan," repeated the witness, just a little flustered.

"Mmmm, good name," smiled the judge.

Miss Sullivan outlined for the jury some of her duties as chief chemist for the Russell-Miller Milling Co., Minneapolis, Minn., and very interestingly described the importance of carefully and frequently testing wheat and flour to obtain uniformity of the finished product.

95% Loans on Wheat Approved by Senate

WASHINGTON, D. C.—The Bankhead amendment to the price control law, which provides a 95% permissible loan on basic agricultural products, passed the Senate last week. It is predicted, however, that the section pertaining to wheat will be removed in conference. The measure is now being considered in the House.

DIRECTED VERDICT FOR DEFENSE IS DENIED IN ANTI-TRUST CASE

Early End of Trial Is Looked for Following Completion of Defense Testimony on June 13—Millers Show Wide Family Flour Price Variations

CHICAGO, ILL.—The defense rested on June 13, in the government's anti-trust suit against the Millers National Federation, 15 flour milling companies and 11 mill executives, and an early conclusion of the trial is expected. Completion of direct testimony for the defense followed a court decision admitting evidence showing wide variation in basic family flour prices. Government attorneys argued that the indictment was concerned only with package differentials and that basic flour prices were irrelevant. The millers' contention was that family flour prices were so highly competitive that the application of sack differentials resulted in no semblance of fixed prices.

Following completion of the government's case on June 8, Judge Philip L. Sullivan, of the United States District Court, before whom the case is on trial, denied a defense motion for a directed verdict of not guilty.

The motion was placed before the court by Leo F. Tierney, defense attorney, who based his plea on the premise that the government had not proved its charge of a conspiracy to fix prices of family flour, as set forth in the indictment. Citing the 127 pieces of evidence submitted by the government as failing to prove that packaging differentials in any way stifled competition between mills, or necessarily caused all mills to arrive at the same selling prices, Mr. Tierney argued that in past court decisions involving anti-trust suits it had been emphatically shown that before defendants had been found guilty it had been proved without doubt that there existed an intent and purpose to fix prices. Mr. Tierney told the court that millers had no control over wheat prices, the raw material from which flour is derived, and therefore could not form a conspiracy to fix the price of flour.

The government's reply to the defense motion was that the price of raw materials did not enter into the government's charge that the package differentials schedules constituted collusion to fix prices, after the base price had been arrived at.

It was the ruling of Judge Sullivan, after both arguments had been completed, that while the evidence presented by the government was not as conclusive as it might have been, he believed that sufficient evidence had been presented to warrant the jury hearing the complete defense and to render a verdict of its own.

When court adjourned on Tuesday afternoon, June 13, Judge Sullivan had under consideration a second motion for a directed verdict in favor of the defendants. Mr. Tierney told the court, after both sides had completed the taking of testimony, that the government had failed to prove conspiracy to fix prices. Government counsel, he said, had failed to disclose to the jury how prices were arrived at, and without considering all the many factors entering into price making it was impossible for the jury to reach a conclusion as to the allegation of conspiracy. The flour milling industry, he said, did not produce huge profits.

Judge Sullivan announced that he would rule on the motion Wednesday, after which, if the case should be allowed to go to the jury, one hour would be allowed each side for closing arguments.

Prior to the resting of the case by the government, Harold E. Yoder, secretary-treasurer of Co-operative Mills, Inc., Auburn, Ind., was called by the government to testify concerning the business methods of his company, as representative of the smaller mills. The Co-operative plant's capacity rating is 200 sacks per 24 hours.

H. W. Clements, manager of the Chicago office of Bemis Bro. Bag Co., identified various invoices and records of bag deliveries to flour mills. These were submitted as evidence by the government.

Dr. Betty Sullivan, chief chemist for Russell-Miller Milling Co., Minneapolis, was put on the witness stand to describe the functions of cereal chemist laboratories in the testing of wheat prior to milling, during the milling process and after it becomes flour, to maintain uniformity of quality of the finished product.

Government counsel was successful in having reference by the defense to the use of the Millers National Federation schedule of package differentials by the Office of Price Administration in ceiling regulations stricken from the record.

Henry E. Kuehn, vice president of King Midas Flour Mills, Minneapolis, was called upon by the defense to tell the jury some of the intricacies of the milling process. He used a number of charts and samples of mill products to demonstrate what happens to wheat from the time it enters the plant until it becomes finished flour.

All of the individual defendants were called to the stand by defense counsel to testify to their methods of pricing and selling family flour. G. Cullen Thomas, General Mills, Inc., Minneapolis, and J. S. Davis, Fisher Flouring Mills Co., Seattle, Wash., gave similar testimony.

At the morning session on June 13, F. A. Smith, treasurer of the Millers National Federation, introduced charts showing the results of a survey of family flour prices made in Illinois, Indiana, Ohio, Michigan, Alabama, North Carolina, South Carolina and Georgia. A questionnaire, he said, was sent to between 200 and 300 millers in those states, calling for family flour prices in 98-lb cottons during four 15-day periods. The prices, he said, varied as much as from $5.25 to $9.35 in Georgia, and from $6.10 to $9.25 in Alabama, with wide variations observable in all the states.

Fifty-five per cent of the prices collected in the survey, Mr. Smith said, were above the mid-point of the quoted range, 3% were at the mid-point and 42% were below it.

OPTIMISM GROWING ON OUTLOOK FOR ADEQUATE FEED NEXT YEAR

Grain Consuming Animal Units for Next Season Expected to Be 90% of Present Year's Total—Spring Pig Crop Report Eagerly Awaited

WASHINGTON, D. C.—Despite continued official statements that grain consuming animal units are out of balance with feed supplies, there is a strong feeling among feed officials within government circles that the feed shortage problem has been solved provided that the 1944 corn crop reaches a level between 2,750,000,000 and 3,000,000,000 bus. Similar optimism is evident, to some extent at least, in the feed industry. One large feed manufacturing firm is reported as preparing its sales force for an aggressive sales campaign during the second half of 1944. This outlook is shared by industry officials now with government agencies.

This newly developed optimism takes on different aspects. One government analyst says that statistically the outlook is good but he predicts spotty feed supplies in deficit areas which will continue through the coming winter. The basis for this viewpoint is found in rough estimates that our grain consuming animal units for next year will be approximately 90% of 1943 numbers. With a feed grain carry-over equivalent to approximately 130,000,000 bus of corn, this observer thinks that we will need a 1944 corn crop of 3,175,000,000 bus to meet feed requirements safely.

Trade sources reveal a substantial agreement with this analysis in most respects, varying in the main only in regard to the 1944 corn crop requirements. These trade sources feel that a 2,750,000,000-bu corn crop will be adequate.

By midyear, private studies estimate, grain consuming animal units had been reduced to a level equivalent to last year, but these estimates predict spring pig crop of 67,000,000, which is approximately 13,000,000 under last year. Government statisticians at the War Food Administration say that even this figure is high and that the pig crop report will show only 62,000,000 head. These government reports are approximations and discount farmers' intentions as indicated earlier this year, which pointed to spring pig crop in line with the private estimates quoted above.

Government statisticians also say that corn planting may exceed 100,000,000 acres and that the greatest acreage increases will be found in the major corn producing states. These officials believe that, with favorable weather, the corn crop can easily exceed the favorable levels of the past two years and venture a prediction that producers will require price support for corn.

CAUTION ADVISED

Feed management officials in the government are not willing to accept this new optimism without modification. They admit an extremely favorable pasture condition and hope that cattle feeders will finish off profitable animals rather than market them directly from the range. However, they note a tendency of the feed trade and consumers to dip into inventories beyond a point of safety, which will deplete supplies that normally could be considered a backlog. These feed management officials say that it would be unwise to predict that we were safely "out of the woods" before the official pig crop estimate is issued and even then it will be prudent to wait until the corn crop can be accurately judged. This official opinion leans to caution on grounds that it is better to be short on animals than on feed.

—BREAD IS THE STAFF OF LIFE—

WEIGHERS' STRIKE CLOSES ELEVATORS

About 60 Plants in Twin Cities Area Affected—ODT Places Embargo on Grain Shipments

MINNEAPOLIS, MINN.—Weighers in the employ of the Minnesota railroad and warehouse commission went out on strike last week for pay increases with the result that all Minneapolis elevators have been idle since June 10 followed by the placement of an embargo against all shipments into the Minneapolis area by S. F. Philpot, district rail director of the Office of Defense Transportation. About 60 elevators in the Twin Cities area are idle and between 2,000 and 3,000 cars are tied up in terminal yards.

Attempts by Gov. Edward J. Thye, Maj. William Moiselle, labor representative for the army's Seventh Service Command, and officials of the state warehouse commission to arbitrate the labor union's grievance were without result. Governor Thye proposed in a letter to union officials to take their problems to the 1945 session of the legislature. He expressed the opinion that the laborers had a legitimate grievance and pleaded with the weighers to return to work, pending settlement of the differences. The executive, grievance and strike committees of the union rejected the appeal to return to work.

The union seeks pay increases up to $225 per month to raise the pay of the state employees to the same level as that paid by private industry for the same jobs. Appropriations for wages and salaries are made by the legislature and under the law the appropriation must not be exceeded. Governor Thye lacks the authority to grant wage increases.

—BREAD IS THE STAFF OF LIFE—

AUSTIN MORTON JOINS KANSAS FLOUR COMPANY

KANSAS CITY, MO.—Austin Morton has joined the sales department of Kansas Flour Mills Company as a sales manager, it was announced this week by W. R. Duerr, vice president and general manager. For the last two and a half years Mr. Morton has been central states sales manager for Shellabarger Mill & Elevator Co., Salina. He resigned from that company last week and takes over his new duties June 15.

Mr. Morton has been identified with the milling business in the Southwest for many years. At one time he was with the Washburn Crosby Co. in the Southeast, and then was associated with the Southwestern Milling Division of Standard Milling Co. until 1938, when he became general sales manager for Dobry Flour Mills, Inc., Yukon, Okla. Mr. Morton joined the Shellabarger company early in 1942.

Mrs. Morton will move to Kansas City as soon as moving arrangements are completed. The Mortons have one son, who is approaching military age.

—BREAD IS THE STAFF OF LIFE—

RODNEY MILLING CO. BUYS RUSSELL MILL

Russell (Kansas) Milling Co. to Retain Its Identity—Personnel to Remain Unchanged

KANSAS CITY, MO.—Rodney Milling Co. has completed arrangements to purchase Russell (Kansas) Milling Co., it was announced here this week by L. S. Myers, vice president and general manager of the Rodney company.

The Russell mill, which manufactures about 1,700 sacks of flour daily and has storage facilities for about 250,000 bus of wheat, retains its identity and will be operated as a separate corporation. Its business consists of both family and bakery flour.

The company was organized in 1905, and has been operated continuously under local management. M. B. McVeigh, well-known flour broker, bought the company late last year. This year he has reconditioned the mill and added a mixed feed plant to the property.

Mr. Myers announces that the personnel of the company will not be disturbed. The mill will be operated much as are the others in the group of five mills in which the Rodney company has an interest, with local managers and superintendents in charge of the individual operations. A. Gail Preuss is superintendent of the plant.

—BREAD IS THE STAFF OF LIFE—

HEART ATTACK FATAL TO JACOB CORNELIUS REGIER

HUTCHINSON, KANSAS.—Many flour millers attended the funeral services held June 9 in both the home and the Buhler (Kansas) Mennonite Church for Jacob Cornelius Regier, president of the Buhler Mill & Elevator Co., who died June 6 in a Hutchinson hospital from a heart attack suffered at his home several hours earlier. Mr. Regier was born on a farm near Moundridge, near by, March 1, 1882.

Mrs. Regier was fatally injured a little more than three years ago in an automobile accident in Florida.

Three sons and a daughter survive Mr. Regier, long an active flour processor. They are: Harold M. Regier and Louis Regier of Buhler; Herbert Regier of Wichita, and Mrs. Harold Ratzalff of Champa, India. His mother, Mrs. C. Regier, Moundridge, two sisters and six brothers also survive.

—BREAD IS THE STAFF OF LIFE—

JACOB REED RESIGNS AS PRESIDENT OF HATHAWAY

CAMBRIDGE, MASS.—Hathaway Bakeries, Inc., announces the resignation of Jacob Reed, chairman of the board, president and director, and Arthur Gwynne and William B. Smith, directors, as of June 5, 1944.

WPB ORDERS 10% RYE USE BY DISTILLERS

Directive Follows WFA Recommendation for Reduction of Rye Stocks, Saving of Other Grains

WASHINGTON, D. C.—All distillers using grain in the production of industrial alcohol were ordered by the War Production Board to add 10% rye to all grain malted, effective July 1.

The action followed a recommendation of the War Food Administration for consumption of 1,000,000 bus of rye per month in alcohol to reduce storage supplies and conserve other grains. It is estimated that the WPB directive will result in the consumption of at least that quantity of grain, if not more. Use of either flour or grain is permitted.

The directive will be revoked, WPB warned, in the event of any speculative rise in rye prices. Rye is the only speculative grain not under price control.

The action of WPB was taken in spite of protests by distillers that the use of rye substantially increases production costs while reducing yields. Other distillers reported that rye flour had gummed up plant machinery. One official recalled, however, that about a year ago the same complaint was voiced regarding the use of wheat flour.

Most of the commercial stocks of rye are in Chicago and have been estimated at from 15,000,000 to 50,000,000 bus. Active speculation, with a number of buyers long on rye, has thrown the storage picture out of balance, it was explained here.

Alcohol Production Insufficient

WASHINGTON, D. C.—Supplies of industrial alcohol this year may fall 21,500,000 gals short of estimated requirements, Dr. Walter G. Whitman, assistant director of the War Production Board's chemicals division, has estimated.

The total 1944 alcohol supply is now estimated at 612,400,000 gals against an estimated requirement of 633,900,000 gals, according to Dr. Whitman. Production of 190-proof alcohol in the first four months of 1944 was at a record rate of 192,200,000 gals, as compared with a production of 137,400,000 gals during the first four months of 1943.

The chemicals division estimates alcohol needs for 1944 at 634,000,000 gals, divided as follows: synthetic rubber, 365,000,000; direct military and lend-lease, 78,600,000; indirect military and civilian use, 160,300,000; anti-freeze, 30,000,000.

It's In the Bag

CHICAGO, ILL.—R. C. Fyfe, chairman of the Western Classification Committee, has announced that, regarding the use of flour bags which have been reversed and the bag maker's certificate thereby transposed to the inside, the committee has authorized the use of such bags. The following notation shall be made on the bill of lading and shipping orders in instances where reversed bags are used:

"Bags have been reversed and the bag maker's certificate is on inside of bag."

Mr. Fyfe said this practice shall continue for the duration of the war.

MNF ASKS EXEMPTION FROM RENEGOTIATION

Flour Milling Is Not a War Industry, Petition Cites—Government Has Protection

WASHINGTON, D. C.—The Millers National Federation, acting on behalf of the entire milling industry, has requested the War Contracts Price Adjustment Board to exempt flour from contract renegotiations. The industry petition points out that flour is a standard commercial article as defined in the recently amended contract renegotiation law and is identical in every material respect with flour sold for general civilian, industrial and commercial use prior to Jan. 1, 1940. Further, the petition shows that flour is an article for which maximum price control has been established and is sold competitively by more than one manufacturer.

In submitting its plea for a favorable ruling by government, the industry shows in full detail that the flour milling industry has not gone through a process of conversion for war production and consequently its manufacturing process has not been subject to radical change, and that cost accounting principles employed prior to January, 1940, are the same which have prevailed in the industry for many years prior to this date.

According to the Millers National Federation petition, industry cost accounting systems are built around a process of accounting, which involves determination of the replacement cost of a wheat mix on the date of sale, less anticipated recovery from millfeed, plus average per unit manufacturing, administrative and selling expense. Even where this accounting principle is not used, millers who have been dealing with the conversion of a single raw material are able to estimate costs with a high degree of accuracy.

To support its contention that competitive conditions within the industry have not changed as a result of war business, the federation cites monthly reports of the Bureau of the Census of wheat ground and wheat milling products, to the effect that for the calendar years 1939-43 approximately the same number of mills with the same approximate capacity continue to operate and compete for civilian and military business.

Excess productive capacity has not been reduced since this country's participation in the war, with the result that many mills continue to sell production at prices less than current replacement costs to maintain running time to reduce fixed overhead expense. This condition protects both civilian and government buyers against excessive prices, it is claimed.

On army purchasing for domestic consumption, the negotiated contract procedure brings a large number of mills into active bidding. Chicago Quartermaster Depot has a list of 300 mills which receive requests to bid on these army requirements. Participation of these mills on a basis of negotiation in advance, wherein mills are enabled to accept the terms of the lowest bidder, has an over-all effect of supplying government requirements at low prices and at the same time protects it against excessive prices on a large portion of its purchases.

In deciding this appeal, the Millers National Federation asks that the government consultant and flour buyer at the Chicago Quartermaster Depot be consulted in confirming statements made in the industry petition.

—BREAD IS THE STAFF OF LIFE—

PLANTING OF COTTON LOWEST IN 52 YEARS

NEW YORK, N. Y.—Cotton plantings this season are the smallest in 52 years, according to estimates of the New York Journal of Commerce as of June 1. Acreage planted is estimated at 20,151,000, showing a reduction of 8.2% from the 21,942,000 in cultivation last July 1, as reported by the government.

Allowing for a normal abandonment of acreage after July 1, the reduced plantings would mean a cotton crop of 11,000,000 bales if yields equal the high record of the past 10 years. Based on the lowest yield of the past decade the crop would be a little over 7,000,000 bales. About 10,200,000 bales would be produced if yields equalled those of 1943, which would be barely enough cotton to meet the current curtailed rate of operation of textile mills.

Important areas of the South show poor production prospects, the newspaper says, while the better sections are not in such condition as to suggest that any production records will be reached.

New Crop Prospects Quiet Soft Wheat Millers' Fears

WASHINGTON, D. C.—Announcement of a record wheat crop estimate exceeding 1,000,000,000 bus and indications of a soft wheat harvest of approximately 330,000,000 bus has quieted the reaction of soft wheat millers to government approval of the use of that grain by distillers for alcohol production.

When announcement of the use of soft wheat for alcohol production was made, soft wheat millers protested vigorously to Marvin Jones and others at War Food Administration offices. These officials have assured the industry that if distiller competition for soft wheat threatens milling supplies of the grain, immediate steps will be taken to reimpose the ban on its use in the alcohol program.

Since that informal decision was made at WFA, there has developed reluctance on the part of soft wheat millers to press their protests. A substantial section of the industry group sees in the heavy crop estimates the danger that grain prices may be unduly depressed and believe that their protest might further influence bearish market trends.

Industry officials here are satisfied that the soft wheat milling interests will be protected by WFA and it is likely that no further formal action will be taken by the industry unless it appears that the mills are unable to obtain grain when the new crop movement begins.

PRODUCTION QUOTAS FOR MILL MACHINERY INCREASED BY WPB

Amended Schedule to Limitation Order L-292 Establishes Two Classes of Equipment—Industry Group Opposes Large Production Increases

WASHINGTON, D. C.—The production quotas for flour, grain and feed milling and processing machinery and equipment have been increased slightly by amendment to Limitation Order L-292 for the period Oct. 1, 1943, to Sept. 30, 1944, and provide a production pattern for the coming year.

Two classes of machinery and equipment are established by the amendment and production quotas are fixed for each class. Grinding, mixing, feeding separators and graders are assigned a basic quota of 150% of the base period production while cereal, flour and grain milling machinery and equipment production is limited to 100% of base period production. The over-all increases in tonnage are slight and will represent a $7,500,000 program, industry representatives estimate. The quotas were fixed by the War Production Board upon the recommendation of the Cereal and Grain Machinery and Equipment Industry Advisory Committee.

War Food Administration officials are believed to have urged a substantially larger program—reportedly at a $10,000,000 level—but industry groups opposed that production rate and in the face of this opposition, the WPB requirements committee was not required to pass on the WFA recommendation.

Industry opposition to a larger program apparently was based upon the fact that present business is not very profitable due to increased labor costs and the consensus was that a limited program at this time would provide a backlog of business after the war.

WPB officials are optimistic over postwar export possibilities for grain and flour milling machinery. Under the amended schedule export orders and orders for certain government agencies are exempted from the terms of L-292. Permission to transfer quotas between manufacturers will be authorized by WPB, depending upon transportation, labor and the requirements for the particular types of equipment involved.

WPB has also amended the dairy machinery and equipment schedule to L-292, placing quotas on a tonnage basis instead of on a unit basis. Quotas under the new schedule will probably represent a pattern for production during the coming year.

Lee Marshall Plans to Attend Uhlmann Farm Wheat Meeting

KANSAS CITY, Mo.—Lee Marshall, chairman of the board of directors for Continental Baking Co., and now on leave from his baking duties to run the Office of Distribution for the War Food Administration, is one of the top ranking representatives of the grain, milling and baking industries in Washington. This week he is making a special trip to Kansas City to speak on June 17 at the annual "open air" Wheat Field Day at the Paul Uhlmann farm near Kansas City, making an interesting annual event an important opportunity for grain men and millers to talk with their friend and hear him discuss the situation as it faces the industries. His topic will be "Food in the War."

The program starts at 2 p.m. It is sponsored by the Kansas Wheat Improvement Association, the Missouri-Kansas Border Soft Wheat Improvement Association, and other interested agencies. C. T. Hall, the local county agent, is in charge for the day.

The farmer's interest in wheat improvement will be discussed by Paul Schlagel, president of the Johnson County Farm Bureau. Charles Topping, Lawrence, Kansas, vice president of the Kansas Crop Improvement Association, will talk on certified seed wheat.

Hard wheat improvement will be discussed by Jess B. Smith, manager of the Associated Millers of Kansas Wheat Improvement Association, Kansas City, Mo., and C. S. McGinness, chairman of the executive committee, Missouri-Kansas Border Soft Wheat Improvement Program, Carthage, Mo., will discuss soft wheat improvement.

Wheat variety tests will be the subject of Dr. John H. Parker, director of the Kansas Wheat Improvement Association, and agronomist for the Missouri-Kansas Border Soft Wheat Improvement Program, Manhattan, Kansas.

A barbecue picnic has been arranged for the social hour at 5 o'clock in the afternoon. Directions to Mr. Uhlmann's farm at 103rd and Antioch Road in Johnson County, Kansas, may be obtained from any grain man in Kansas City.

Enrichment Warning Given 18 Kansas City, St. Louis Bakeries

Twelve bakers in St. Louis and six in Kansas City have been charged by the War Food Administration with producing bread not enriched to the standard required by War Food Order No. 1.

The warning was in the form of letters sent to the bakers by George Livingston, chief of the compliance division, Midwest Region, of the Office of Distribution, WFA. In the letters, the bakers were told that if they fail to live up to the provisions of the food order by enriching the bread to the extent required, they will be subject to penalties of a year in jail or a $10,000 fine or both.

FLOUR BUSINESS LAPSES INTO DULLNESS FOLLOWING SPLURGE

Bright Wheat Crop Prospects and Declining Prices Whet Desires of Both Buyers and Sellers to Hold Back—Sales Far Below Last Week

Sales of flour this week are making a poor comparison with the tremendous volume booked in the few presubsidy announcement hours of the previous week, but do not look too much out of line with the routine business evident with this exception in recent months. The explanation of the light sales lies in the simple fact that flour buyers are well booked ahead and desire to await the outcome of the currently weaker trend in wheat markets. Their desires along these lines are whetted by the official government estimate of a record billion-bushel wheat crop this year, which, if attained, will change the wheat supply picture from one of relative scarcity to one of abundance. Millers are equally content to watch these developments and are not pressing for sales. The combination of both buyers and sellers following a waiting attitude could hardly result in a great deal of activity.

Very little flour has been sold at Minneapolis since the announcement of the decrease in the subsidy. Following the one-day rush to buy at that time, interest has been at low ebb. The price situation, however, is a little more satisfactory. Before the reduction in the subsidy, sales were being made at around 19c cwt under the ceiling. When the reduction was announced, prices on high gluten flours reacted to the ceiling basis and at present quotations are generally 10c under. Top clears, however, are 25@30c under. The estimate of a bumper wheat crop and resultant weakness in wheat prices, are not conducive to heavy buying of flour. Most buyers are covered for July, anyway, so they are holding off. Spring wheat mills last week sold around 37% of capacity, compared with 235% a week earlier and 42% a year ago. Shipping directions are spotted, ranging from poor to good. Exporting millers report fair sales recently to Cuba and Mexico, but little elsewhere.

Following the sensational flash of business on the subsidy reduction last week, flour sales at Kansas City lapsed into dullness. Buyers appear content to watch the wheat market decline and if they sense a lower subsidy for July, they may become eager purchasers again late in June. Sales by southwestern mills amounted to only 41% of capacity, as compared with the exceptional bookings of 246% the previous week and 60% a year ago. Fortified with larger reserves of wheat, and still somewhat uncertain about new crop values, millers are not pressing for flour business and prefer to await developments. A few large flour buyers and many small ones are inquiring for information and placing bids below the market to test it out, but little business results from such tactics. Family business is still disappointing. Clears are hard to move. Mexican export business promises to take some high ash stuffed straights and clears, but may not reach sufficient volume to alter values.

Demand and flour sales at Buffalo have drifted back into routine, following the splurge of business on May 31. Buyers are still well booked ahead and there is no urgent necessity to stock up anew. Sales are largely confined to fill-in orders. Foreign trade is light. Directions are fair. The flurry before the subsidy announcement took care of all requirements at New York and fresh sales are lacking. Mills, however, are not pressing for business, since they, along with most buyers, are bearish.

Boston reports a quiet trade after last week's moderate volume. The trade is still watching the new crop, convinced that a broader movement will result in lower wheat prices. Flour buyers are well booked ahead, and millers, in their present attitude, are not pressing for sales. Family types are not moving.

Buying interest subsided at Chicago and the market is quiet. Demand for family flour continues quiet and shipping directions are slow. A couple of round lots were sold at St. Louis, but otherwise trading is dull. Car lot orders are few and far between for both bakery and family types. Demand for clears has eased, also.

Southeastern flour markets report sales limited to occasional cars of hard and soft wheat short patents for prompt shipment. Nashville buyers are awaiting new crop movement and developments before booking ahead. An advance of 10@15c on hard wheat and a decline of the same amount in soft wheat flours, based on the June subsidy rate, has created more interest in soft wheat. Sales previously had been confined largely to hard wheat flour.

A little new army and navy business comprises the bulk of trade in Pacific Northwest flour markets. Buyers are not much in the mood to book, due to current weakness in wheat markets, and the excellent outlook for the new crop. Mills are grinding on old orders at a fair rate. There are no new lend-lease purchases and a lot of old business of this character is still on the books of many bills, who would like very much to get shipping directions on it.

PRODUCTION

Flour production in the United States showed an increase of 269,000 sacks as compared with the output of the previous week. The total output of the mills reporting to THE NORTHWESTERN MILLER, accounting for 73% of the nation's output of flour, amounted to 3,044,042 sacks this week, against 2,775,095 the previous week. In the corresponding week a year ago, when mills reporting accounted for 65% of the total, the figure was 2,848,070. Two years ago, when 64% of the total was reported, the output was 2,401,387 sacks and three years ago it was 2,618,053. The Buffalo market reports a decrease of 58,000 sacks. All other sections report an increase, the Northwest showing a gain of 136,000, the Southwest 191,000, central and southeastern states 94,000 and the Pacific Northwest 7,000 sacks.

RECENT EASIER TONE IN FEEDSTUFF MARKETS CONTINUES

Early New Crop Outturns Good—Demand for Ground Grain Feeds Continues to Decline—Supplies of Wheat, Millfeeds, Corn Feeds, Linseed Meal Still Below Needs

The recent easier tone in feed markets continues, evidenced principally by a further falling off in the demand for ground grain feeds. Feed dealers are more cautious in contracting for deferred shipments, meanwhile awaiting further new crop developments which have been very favorable in the new harvest area of the Southwest. Excellent pasturage has reduced direct feeder demand, but mixed feed manufacturers especially keep the wheat millfeed market thoroughly cleaned up with no apparent lessening in demand either for spot or future shipments. Production last week, however, was considerably smaller. There is an occasional lot of soybean meal offered, but the market is clean of linseed meal with crushers already reported sold up for June production. The index number of wholesale feedstuffs prices is unchanged at 193.6 compared with 176.4 for the corresponding week last year.

At Kansas City there is a further contraction in the demand for most feed ingredients because of new crop developments and the abundant supply of green feeds. The movement of oats and barley has started in some volume in southern states and new crop hay is appearing on southwestern and western markets. Shrinkage in numbers of hogs in feed lots and reductions in hatchery sales of chicks are partly responsible for the letdown of mixed feed sales. The outstanding exception to the improved feedstuffs supply situation is the continued scarcity and urgent demand for millfeeds. Prices remain firmly fixed at full ceiling levels and offerings are exceedingly small.

At Chicago there is little change in the general feed picture but it is believed that millfeeds indicate a slightly easier undertone and though production is rather heavy, no straight car lots have been offered.

At Buffalo lighter millfeed production because of the holiday and lack of shipping instructions on flour have resulted in smaller allocations of millfeeds and a continued firm situation. Output is reduced to less than 60% of capacity and there were no general offerings and no accumulation of stocks.

Millfeed production at Buffalo, in the Northwest and Southwest increased during the past week, with total output at the three centers amounting to 46,809 tons, compared with 43,328 in the preceding week and 45,246 in the corresponding week a year ago, according to figures compiled by THE NORTHWESTERN MILLER. Crop year production to date amounts to 2,615,501 tons, as against 2,400,041 at this time a year ago. Complete details of production are shown in the table on the opposite page.

Demand for ground grain feeds has diminished further and quotations are generally reduced although the grain remains at ceilings, with the exception of rye for which demand for feed remains exceedingly small. Feed barley continues scarce but demand for ground barley is lighter and quotations are about unchanged.

Midnight Subsidy Release Planned

Numerous complaints from the flour trade concerning the method of release of the important flour subsidy figures by the Defense Supplies Corp. have prompted the government agency to make plans to issue future announcements at night, possibly near midnight, so as to assure all mills equal opportunity in doing business. The late afternoon announcement of the June figures on May 31 set off a flour buying wave seldom if ever equalled in recent years, and criticism of that system has been reaching the DSC from nearly all branches of the trade.

—BREAD IS THE STAFF OF LIFE—

Mexican Flour Sales Too Large, Too Quick

KANSAS CITY, MO.—The Mexican government and United States exporters of flour sat back this week to review the business of the past fortnight which they had transacted and it began to appear that too much had been done too quickly.

One representative of the Mexican government pointed out that apparently much more flour had been purchased than had been authorized by U. S. government permits, and that it appeared enough had been contracted to cover permits not only for July but also for August and September. It is somewhat doubtful, however, if purchases made without permits will be permitted to apply to August and September needs.

Last week the Mexican buying agency asked for offers again, and early in the week some buying was done. Private Mexican importers were not believed to be in the market again. One sale to a private importer sold by a Texas mill about two weeks ago was about right in line with the regular clear market, possibly somewhat higher.

Those who sold basis Laredo, Texas, found the boxcar shortage impeding their shipments. It appears that Mexican railroads and industry do not move this equipment back as quickly as it comes down there. Only three cars daily for 100 days have been allowed to those in Texas who are shipping wheat to Mexico. At this rate it will be some time before the wheat is delivered, and it is obvious that flour will have equally difficult traveling.

Larger Production Estimate Breaks Wheat Prices

Prospects of Record Crops Cause Buying Indifference — Values Well Below Ceilings

KANSAS CITY, MO.—The first new wheat of the season arrived here June 12, two days earlier than a year ago and five days ahead of two years ago. The grain originated at Kiowa, Kansas, and graded No. 1 dark, 62.6 lbs, 11% protein. It sold at auction, as is the custom on the first arrivals each year, and brought the ceiling of $1.63, or a premium of 5½c over the regular market. The wheat was received by Larabee Flour Mills Co., and was purchased by the Simonds-Shields-Theis Grain Co.

Sharp declines in wheat prices, which have lowered values well below ceiling limitations at all important markets, occurred this week. The surprisingly large increase in the official estimate of wheat production has been the principal weakening influence, although the apparently favorable progress of the European invasion has been a contributing factor, also. Interest in cash wheat waned as values declined, adding more impetus to the downward trend.

Prices Sharply Down

Final prices of wheat futures on June 13 are 2¼@5⅜c lower than a week ago at the principal contract markets. The July future shows the largest loss. Rye futures are down 1¼@1½c for the week.

A turn in the wheat supply situation from one of scarcity to one of abundance is indicated by the official government June forecast of a total winter and spring wheat production this year of 1,035,000,000 bus, a new high record. The estimate of winter wheat outturn was raised 52,000,000 bus over the May estimate, to 714,000,000 bus, while the forecast of spring wheat production at 320,000,000 bus was nearly 100,000,000 bus above recent private estimates. Such yields, if realized, will be nearly 200,000,000 bus greater than in 1943 and will exceed the previous all-time record crop of 1915 by 29,000,000 bus. With carryover, it appears the 1944-45 supplies of wheat in the United States will approximate 1,335,000,000 bus, an amount well above the largest annual consumption ever experienced. Early arrivals from the new crop in Texas, Oklahoma and southern Kansas are running high in test weight, and medium to lower in protein.

Considerable interest in trade circles was manifest over the War Production Board directive to distillers to use 10% of rye in grain mixtures for industrial alcohol manufacture. This announcement tended toward a more friendly feeling for the dark cereal, but weakness in wheat and indications of a rye crop above average were more than the market could stand and prices lost ground.

As the first car of new wheat arrived at Kansas City June 12, the market for cash wheat continued to soften, with buyers not at all eager to take on spot or immediate wheat and not much trading going on for all July shipment at 4c over the July future. Spot sales were 7@7½c over July, with all June shipment weak at 6c over. Prospects of a sizable movement of new wheat in the next two weeks are good, if weather stays bright in southern Kansas. Rains are retarding maturity in northern areas of Kansas, but damage to wheat is slight so far. In view of the market weakness, millers are not anxious buyers and flour purchasers are equally indifferent. However, the real market will be arrived at during the harvest movement, when buyers will begin to fill their bins and cover flour sales.

At Minneapolis, cash offerings met an indifferent demand toward the close of the week, after having moved readily in the first few days. Prices dropped away from ceiling levels quite sharply and are now out from under the influence of OPA differentials and markups. Confusion in market activities resulted from a strike of state grain weighers at Minneapolis, which caused all grain shipments to this market to be embargoed pending settlement of the wage controversy that brought about the walkout. Interest in to-arrive offerings moderated and bids are several cents below ceilings, with protein premiums unsettled and much weaker for grain to arrive during June and July. A much easier durum wheat market also is evident at Minneapolis, with prices well below ceilings and practically no interest in to-arrive offerings.

Pacific Northwest cash wheat markets are extremely dull, with prices showing further weakness. Little improvement is expected before new crop wheat begins to move in July. Mills report slow flour business and are mostly covered on their wheat requirements, which limits milling demand to only occasional special quality lots for special blending. Demand from the middle west has flattened out since the start of new crop movement in the southwest. California buyers are not interested in Pacific Northwest wheat, either for feeding or milling purposes, since their own crops are expected to roll into market soon.

—BREAD IS THE STAFF OF LIFE—

SPOT BURLAP PURCHASES REPORTED IN CALCUTTA

NEW YORK, N. Y.—Spot purchases of burlap, well over prices paid on last year's contract, are reported made in Calcutta by the government's agent. Mills, however, continue unwilling to make forward commitments on a firm price, and insist on an escalator clause based on variations in raw jute. The reports of extensive buying by Argentine interests above United States ceiling prices have been further confirmed and two full cargoes left India for that country during April.

Little can be foretold as yet on the jute crop planted just previous to the monsoons. The government has asked farmers to co-operate in its rice growing program and cut jute acreage to 50% of the 1940 crop. However, the higher prices being paid for jute will probably work against this and a fairly large planting again result.

Bag sheetings sold in greater number of lots of small size, with occasional commitments beyond the third quarter, into the fourth. The scarceness of osnaburgs was unchanged. Although the invasion was of great general interest, it did not particularly affect the bag business, and until the end of the war is more discernible, no general movement is expected. Foodstuffs packed in double cotton bags, as well as multiwall paper bags, will continue to be sent overseas, drawing on bag materials for food exports for American forces, for lend-lease and liberated populations, for some time to come.

Bemis Bro. Bag Co.'s cotton goods index, a composite figure reflecting wholesale prices of principal cotton cloth used in bag making expressed in cents per yard of cloth, is 8.00 as compared with 8.00 a year ago. The Bemis composite figure reflecting duty paid early shipment prices of heavy and lightweight Calcutta burlap expressed in cents per lb of cloth is 17.74 as compared with 17.99 a year ago.

Current Flour Production

An Exclusive Statistical Service Maintained for Northwestern Miller Readers of The Last Half a Century — For More Than —

A Little Up

WEEKLY FLOUR PRODUCTION, IN SACKS (CWT)

	June 10, 1944	Previous week	June 12, 1943	June 13, 1942	June 14, 1941
Northwest*	677,721	541,668	587,877	518,467	600,975
Southwest	1,065,700	974,685	1,043,700	938,828	974,824
Buffalo	411,129	469,290	435,478	346,847	338,439
Central and Southeast*	517,329	423,735	508,942	306,526	392,837
North Pacific Coast	372,163	365,717	272,073	290,719	310,978
Totals	3,044,042	2,775,095	2,848,070	2,401,387	2,618,053
Percentage of total U. S. output	73	73	65	64	64

*Partly estimated.

	Percentage of activity					Crop year flour production July 1 to	
	June 10, 1944	Previous week	June 12, 1943	June 13, 1942	June 14, 1941	June 10, 1944	June 12, 1943
Northwest	69	55	56	48	54	34,590,551	32,915,571
Southwest	77	70	75	68	70	59,052,498	55,030,489
Buffalo	71	81	75	60	58	23,399,525	20,761,742
Central and S. E.	65	54	64	49	58	26,648,910	22,908,136
No. Pacific Coast	86	89	83	73	77	16,616,635	12,982,184
Totals	74	67	70	58	63	160,308,119	144,598,122

SOUTHWEST

55 Representative Mills

	Weekly capacity	Flour output	Pct. activity
June 4-10	814,380	668,301	82
Previous week	814,380	638,502	78
Year ago	814,380	648,914	80
Two years ago	814,380	546,375	67
Five-year average			68
Ten-year average			60

Kansas City

June 4-10	352,800	230,019	65
Previous week	352,800	171,558	49
Year ago	352,800	230,770	65
Two years ago	352,800	221,039	63
Five-year average			65
Ten-year average			66

Wichita

June 4-10	111,132	92,803	84
Previous week	111,132	78,548	71
Year ago	111,132	93,883	84
Two years ago	111,132	82,438	74

Salina

June 4-10	109,956	74,577	68
Previous week	109,956	86,077	78
Year ago	109,956	70,133	64
Two years ago	109,956	88,976	81

PACIFIC COAST

Principal mills on the North Pacific Coast:

Seattle and Tacoma District

	Weekly capacity	Flour output	Pct. activity
June 4-10	269,100	227,855	85
Previous week	269,100	237,610	88
Year ago	184,808	136,851	74
Two years ago	256,368	158,885	62
Five-year average			67
Ten-year average			61

Portland District

June 4-10	143,200	144,308	101
Previous week	143,200	128,107	89
Year ago	143,472	135,222	94
Two years ago	143,864	131,657	92
Five-year average			83
Ten-year average			69

THE NORTHWEST

Principal interior mills in Minnesota, including Duluth, St. Paul, North Dakota, South Dakota, Montana and Iowa:

	Weekly capacity	Flour output	Pct. activity
June 4-10	660,498	409,319	62
Previous week	660,498	356,099	54
Year ago	738,822	357,347	48
Two years ago	738,822	365,736	52
Five-year average			46
Ten-year average			46

Production for current week was partly estimated.

Minneapolis

	Weekly capacity	Flour output	Pct. activity
June 4-10	318,120	268,462	84
Previous week	318,120	185,569	58
Year ago	319,284	230,530	72
Two years ago	353,388	152,731	43
Five-year average			57
Ten-year average			52

CENTRAL AND SOUTHEASTERN

Mills in Illinois, Ohio, Michigan, Indiana, Kentucky, North Carolina, Tennessee, Virginia, Georgia and eastern Missouri:

	Weekly capacity	Flour output	Pct. activity
June 4-10	792,240	517,329	65
Previous week	792,240	423,735	53
Year ago	818,262	508,942	64
*Two years ago	627,435	306,526	49
Five-year average			57
Ten-year average			57

Current week partly estimated.
*Not comparable with later years because fewer mills reported.

BUFFALO

	Weekly capacity	Flour output	Pct. activity
June 4-10	577,416	411,129	71
Previous week	577,416	469,290	81
Year ago	577,416	435,478	75
Two years ago	577,416	346,847	60
Five-year average			66
Ten-year average			71

MILLFEED OUTPUT

Production of millfeeds, in tons, for the current and prior two weeks, together with season totals, of (1) all mills of Nebraska, Kansas and Oklahoma and the cities of Kansas City and St. Joseph; (2) all mills of Minnesota, North and South Dakota, and Montana, including Minneapolis, St. Paul and Duluth-Superior; (3) mills of Buffalo, N. Y. (computed from operation reports made to The Northwestern Miller by more than three fourths of the flour milling capacity of the territories included):

	Southwest		Northwest		Buffalo		Combined	
	Weekly production	Crop year to date	Weekly production	Crop year to date	Weekly production	Crop year to date	Weekly production	Crop yr. to date
June 4-10	25,710	1,464,430	13,233	699,163	7,866	451,918	46,809	2,615,501
Previous week	23,762		10,587		8,979		43,328	
Two weeks ago	26,689		12,628		9,016		48,333	
1943	25,144	1,332,191	11,770	667,951	8,332	399,899	45,246	2,400,041
1942	22,540	1,193,542	9,316	597,208	6,636	367,987	38,492	2,158,737
1941	23,299	1,140,511	11,539	544,776	6,475	364,879	41,313	2,050,166
1940	20,299	1,108,143	10,269	561,005	6,979	353,799	37,547	2,022,948
Five-yr. average	23,398	1,247,763	11,225	614,019	7,258	387,696	41,881	2,249,478

DECIDEDLY FAVORABLE WEATHER FAVORS RAPID CROP PROGRESS

Four Successive Weeks of Fine Conditions Experienced Over Wide Areas—Early Cut Wheat Yielding Good—Corn Planting Nearing Completion

Good rains over a large northwestern area and generally ample soil moisture practically everywhere between the Rockies and the Appalachians, have provided another decidedly favorable crop growing week. There have been four successive weeks of favorable growing weather, a condition seldom experienced over such an extensive area for so long a time at this season of the year.

For the country as a whole, only limited areas, principally in the Atlantic states, are in need of moisture. In a north-south belt from New England over Atlantic coastal sections to Georgia and Florida, May precipitation was very scanty and the past week brought little or no relief to the drouthy conditions.

Drouth conditions prevail also in restricted portions of the Southwest, including southwestern Oklahoma, extreme western Texas and southern New Mexico. Other than in these areas, there is only a local need for rain, which makes an unusually favorable situation as regards soil moisture, when the country as a whole is considered.

Except in parts of the Northwest, farm work made generally good progress and, while still considerably late in a good many places, there has been a seasonal gain in catching up in most agricultural areas, notwithstanding the shortage of farm labor.

Winter wheat is mostly in good condition throughout the main belt. Harvest has been resumed in central and northern Texas and southern Oklahoma, but is not expected to begin until the latter part of this month in Kansas; the crop is still reported about two weeks late in Missouri. Wheat is generally matured in Kentucky and will be ready to cut in 10 days to three weeks. Much has headed in the Ohio Valley, with some beginning to turn in southern Indiana. Wheat is reported well headed in Nebraska and some has headed in southern Wisconsin. In the Northwest, winter wheat is in boot and some is heading in parts of Montana, while heading continues in Washington. Rain is still needed in the interior of the Pacific Northwest.

Progress and condition of spring wheat are mostly good to excellent in the main portions of the belt, with good stands and color noted generally. Oats are being harvested in southern sections. Oats remain in variable condition in central valley areas, with condition ranging from poor to fairly good; considerable is heading in southern Illinois. In the eastern Ohio Valley, oats improved and some are now in good condition. In Nebraska, oats and barley are reported rather poor, with growth slow and crops very weedy. Flax planting continues in northern states.

General warmth, sunshine and less extensive rainfall made a favorable week for planting and germination of corn in the principal producing states. Germination is unusually rapid and early corn is making good growth.

Recent rains in Oklahoma may have retarded harvesting a few days, but with a few exceptions, wheat in all areas of the state has improved as a result of better moisture conditions. Development of rust in the southern part of the state is not expected to cause serious damage, due to the advanced stage of the crop. Yields from early harvested wheat are very good.

In Kansas, all except late wheat is headed out, but harvest is expected to be from one to two weeks later than usual, despite rapid development the last few weeks. Little damage from Hessian fly has occurred this year, but some rust is showing in eastern Kansas fields. Strong winds have caused some lodging —serious where wheat growth is rank. Weeds are a menace to late wheat in western Kansas and to thin stands of oats and barley. Kansas farmers have completed corn planting and are well started with sorghum seeding. Early corn is receiving its first cultivation.

MAY RAINFALL ESPECIALLY HEAVY

Kansas rainfall in May was especially heavy over the southwest quarter and a number of southeastern and extreme northeastern counties, but was somewhat below normal over a large area. The average for the eastern third was 3.77 inches; the middle third, 3.44 inches; the western third, 4.48 inches, and for the state as a whole, 3.90 inches, which was 0.09 inch above normal. Combined with precipitation of April preceding, this made a total of 11.15 inches for the state, which is the greatest amount ever recorded in Kansas in any two-month period at this time of the year.

Some winter wheat in Nebraska is still being abandoned. That portion of the crop that came up this spring is very late, failed to stool, has a sickly, weak appearance and is weedy. Summer fallow wheat in the Southwest and the panhandle, which has been very promising, is needing more rain. Spring wheat in Nebraska is promising. Oats and barley are very poor and some are being abandoned and planted to corn and other crops.

Indiana winter wheat continued to grow rapidly and heavy stalk is reported generally. The crop is heading in the north and is beginning to turn color in the south. Oats have improved considerably and are now in fair to good condition. Planting of corn is completed in some districts, but averages about 75% done for the state as a whole. Illinois crop conditions and progress are about on a par with Indiana. Cutting of wheat will start generally in Kentucky by June 15 to 20. Other small grains are also maturing well and some fall planted oats are being cut. Kentucky corn is about 95% planted and is mostly up to good stands. Cultivation has made good progress. Iowa corn is 86% in the ground and most of the acreage lost by erosion or flooding has been replanted. The unplanted acreage remaining is mostly lowland that is still too wet or still under water. About 37% of the Iowa soybean acreage is in. Best oats are 8 to 10 inches tall and look fine.

NORTHWEST CROPS GOOD

Northwest grain crops have made rapid and satisfactory progress under the influence of almost ideal growing conditions, according to the Van Dusen Harrington Co. crop report. Small grains are 4 to 14 inches high and generally of good stand and color. Bread wheat and durum are stooling. Early corn is up and much of it has been cultivated. Rye in the South has headed and is starting to head in the North. This crop appears to be spotted, but the general condition is satisfactory on the very limited acreage devoted to it.

In an area as large as the Northwest crop producing territory, there is, as usual, some variation in conditions, the report says. In some areas in the northern part of the territory, crops had actually begun to show the effects of dry weather before the most recent rainfall. This condition has now been remedied and moisture is ample for present needs. In the South, some acreage shows the unsatisfactory effects of excessive moisture and some low ground will remain idle this season. Otherwise, damage reports are local in character and are of no significance, viewing the territory as a whole. There is general complaint of weeds. This constitutes a menace since crops are largely dependent upon current rainfall.

Reserves of subsoil moisture in a large part of the territory are inadequate, and frequently precipitation will be required to maintain the crop's current condition. The present outlook, however, in the Northwest is decidedly favorable, the Van Dusen Harrington report concludes.

PACIFIC NORTHWEST AND CANADA

Pacific Northwest wheat is not in the best of condition. Some of the heavier producing sections received a little rain several days ago, but good rains will be needed shortly to insure good yields. Some areas need moisture now.

Western Canada's crop prospects show further improvement, with the return of warmer weather, following additional generous rains. The heaviest rains fell in Manitoba, but precipitation covered practically all areas. Southeastern Alberta is still dencient in moisture and crops there are suffering. Wheat is coming into shot-blade in many sections and practically all reports indicate excellent root development and good color. In a few small sections of Manitoba, where excessive moisture has occurred, small patches have been drowned out, and this will be reseeded for green feed. Many correspondents describe the general crop outlook as never better.

STEM RUST DAMAGE IS POSSIBLE

WASHINGTON, D. C.—Present indications are that stem rust of wheat will be generally prevalent this season in Kansas and Missouri and eastward, but it cannot yet be predicted how severe the infection will be, the Bureau of Entomology and Plant Quarantine states in its rust summary of June 6. It is likely that some fields of soft wheat and some late fields of hard wheat will be heavily damaged in Texas, since rust has developed fairly rapidly in that state. Spores have apparently been carried northward into Oklahoma, Kansas and Missouri and a trace of stem rust has been found in southeastern Nebraska.

SOUTHWESTERN NEW WHEAT MOVEMENT EXPANDS

WICHITA, KAN.—Two cars of 1944 wheat from Kiowa, Kansas, were received here June 10, starting movement from the state's estimated crop of more than 174,000,000 bus. The wheat graded No. 1 dark, 10.75 and 11% protein, 61.6 and 62.8 lbs, and 13.9 to 14.2% moisture. The arrivals are two days earlier than last year and two years ago.

Kiowa nearly always originates first shipments of Kansas wheat and the slightly earlier movement is not a criterion that harvesting over a wide section of southern Kansas is due to start immediately. It probably will be June 15 to 20 before wheat is matured over an extensive area and the crop in northern sections will not reach the harvest stage until about July 1.

The low protein of the Kiowa wheat is about normal. Last year the first shipment tested 10.90% and two years ago the range was 10.75 to 11.50%.

ENID, OKLA.—Receipts of new wheat were 23 cars June 10, out of total arrivals of 39 cars. The new wheat ranged 11.60 to 14% protein; average 12.72%; weight, 58.7 to 61.8 lbs; average, 60.9; moisture, 12.1 to 16%; average, 14.11%.

FORT WORTH, TEXAS.—Arrivals of new wheat June 9 were 69 cars, all but 4 cars grading No. 1, 60.5 to 63.1 lbs; moisture, 10.8 to 15.3%. Three cars were No. 2, 59 to 59.7 lbs, and one was sample, 59.8 lbs, 16% moisture. Average protein of all new wheat was 12.53%.

——BREAD IS THE STAFF OF LIFE——

OKLAHOMA WHEAT YIELD DOUBLES LAST YEAR'S

OKLAHOMA CITY, OKLA.—Small grains, which were in the dough stage, were materially improved the past week by additional rains in all portions of the state. Wheat showed a condition of 85.4% of normal June 1, compared to 60% one year previous, it is revealed in the monthly survey of the state board of agriculture. The survey indicated a production of 62,972,000 bus, compared to 31,000,000 last year.

Harvest has begun in the southwestern portion of the state with eight carloads reaching Enid on June 8. The grain tested high in weight, around 64 lbs, with a satisfactory moisture content. Although some rust developed in the area between the Wichita and Arbuckle Mountain ranges, the grain was sufficiently advanced to minimize the damage. In every wheat belt, yields are expected to be high, notably Texas County in the panhandle, where some fields will produce as much as 60 bus to the acre.

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MINNEAPOLIS DULUTH

N. Y. FLOUR DISTRIBUTORS HEAR JAMES R. AFFLECK

NEW YORK, N. Y.—James R. Affleck, Philadelphia, newly elected president of the National Association of Flour Distributors, addressed the New York Association of Flour Distributors at its monthly meeting in the Produce Exchange, June 8. He explained that he and J. A. MacNair, New York, second vice president of the national association, had conferred with Office of Price Administration officials in Washington earlier in the week.

Government officials, according to Mr. Affleck, are opposed to giving 30 days' notice between the announcement of new price ceilings and their effective date. He added that specific figures will have to be presented showing real hardship if anything is to be accomplished in this direction.

Mr. Affleck also said that some government officials are deeply concerned over the use of wheat for other than human consumption, yet nothing is apparently being done about it. He concluded by emphasizing the fact that the National Association of Flour Distributors desires to do all it can in behalf of the flour distributing industry.

W. P. Tanner, Herbert H. Lang and Harvey Landau, delegates of the New York organization to the recent annual convention of the National Association of Flour Distributors, reported favorably on the actions of that meeting.

Resolutions were adopted expressing the New York group's appreciation for services rendered the industry during the past year by Frank T. Herbert, Chicago, and W. P. Tanner, New York. A resolution was also adopted in memory of the late Reuben S. Seligmann, who was an active member of the association.

With this meeting the New York association adjourned for the summer.

——BREAD IS THE STAFF OF LIFE——

DEFERRED FLAX SALES PERMITTED

WASHINGTON, D. C.—The War Food Administration has amended War Food Order 94, which controls the purchase and delivery of 1943 crop flaxseed, to permit trading in flaxseed for future delivery. The amendment is retroactive to March 1, 1944.

The original order defines "purchase" as meaning "to purchase, acquire by barter or exchange, or to contract to do any of the foregoing," and states that the term "sell" shall be construed accordingly.

The amendment adds: "However, the terms 'purchase' or 'sell' shall not include the purchase or sale of flaxseed futures contracts on, or subject to the rules of, a board of trade designated as a contract market under the provisions of the Commodity Exchange Act.

No other changes in WFO No. 94 are made by the amendment.

——BREAD IS THE STAFF OF LIFE——

BOARD OF TRADE OFFICERS

HUTCHINSON, KANSAS.—Hal A. Davis, secretary-treasurer of the Western Terminal Elevator Co., is new president of the Hutchinson Board of Trade, succeeding D. B. Frazee. P. M. Clarke was chosen vice president. W. T. Macauley, executive secretary, has announced the following new directors: G. H. Bidwell, Charles Colby, D. B. Frazee and C. D. Jennings.

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Today & Yesterday

GREAT BRITAIN'S RATIONS

There has been a good deal of misunderstanding in oversea countries with regard to supplies of food in this country. Some appear to have been under the impression that the population of Great Britain is existing in a half-starved condition. It is not so bad as that; on the other hand, the rations are by no means as liberal, or the range of food as wide, as that in the United States, Canada, Australia, South Africa or New Zealand. Certain experts have endeavored to persuade the people of Great Britain to believe that they are all the better in health for the restricted rations available, but most of them have their own notions on that score and they do not square with those of the experts. They will take a lot of convincing that 2 oz of butter, 2 oz of lard, 2 oz of cheese, 4 oz of bacon, 4 oz of margarine and 8 oz of sugar per head per week, plus plenty of potatoes and bread and minus fresh fruit, constitute an adequate amount of food or a suitable diet for the maintenance of good health.

A comparison with the United States and Canada shows that "the United Kingdom is about 10% below the two countries named in total food supplies, measured in calories per head, and considerably farther below in most of the foods which consumers prefer, notably meats, poultry, eggs, butter, sugar and fruits." Because we realize that these countries are better situated than Great Britain as food producers, because we realize also that shipping space is not available for larger imports of food, we make no complaint, so long as the "experts" will not tell us that "short commons" are good for us. Indeed, we have reason to be thankful that the position is not worse, and equal reason to be grateful to overseas countries for the considerable quantities of food we receive from them, without which we should be in a sad plight.

There may be excess in standard profits, which, by the way, applies very unequally, and which in any case is grabbed by the government, but there is no excess in any single class or kind of food available in this country, unless it is in the case of the individual who finds himself with more lettuces on his allotment than he can consume. It is not, however, to be found in what are termed the "protective" classes of food; and as to fats, the average housewife

is in a perpetual worry because of insufficiency. Bulky foods may distend the stomach, but they do not nourish the body as well as a well-balanced diet would do, notwithstanding the counsels of the propagandists. Florence Nightingale merely repeated an axiom of the British people when she said that "never to know that you are beaten is the way to victory," but, however much we may relish sayings of this kind, the hard fact remains that we are on the deficiency side in the matter of food supplies, not that this will afford much comfort to the nation's enemies, who are in a far worse situation, actual and prospective.—*Milling, Liverpool, Eng.*

THE DAY OF THE PORCELAIN ROLLER

Although steel rolls for grinding grain had been used as early as the 17th century, it was an experimental flurry over porcelain rolls in 1874 that gave roller milling its first real impetus. The porcelain originator was an Italian machinist named Wegmann, who made his first installation in a Budapest mill. His porcelain rollers were seven inches in length and 4½ inches in diameter, one roller of a pair being driven direct and the other by friction. Pressure was applied, not by the ratchet-screw arrangement but by weighted levers, the rollers working at a speed of from 180 to 200 revolutions per minute.

While the porcelain rolls did good service they did not prove equal to the heavy work imposed on them in the Budapest mills. Mr. Wegmann had made a contract with the Budapest firm of iron founders and machinists, Ganz & Co., to make the frames for his porcelain rollers.

Andreas Mechwart, managing director of the company, afterwards concluded to substitute chilled iron for porcelain. Ganz & Co. were large manufacturers of chilled iron car wheels and turned out an excellent grade of chilled iron. The rolls made from it speedily won favor from the Budapest millers.

In the old iron or steel rolls, the corrugations were not cut into the surface but were cast in. It required constant attention and filing to keep the corrugations in working order. The labor and expense of these repairs deterred Budapest millers from adopting rolls generally, though the Pesth roller mill had used them successfully for many years.

Difficulty was at first experienced by Mr. Mechwart in getting any tool hard enough to cut corrugations in the chilled iron. As soon as this was accomplished, corrugated rolls were extensively adopted and proved the greatest incentive to the production of flour solely by rolls. In an incredibly short time all the big Budapest mills were altered over from stones to rolls. Many of them retained stones, however, for grinding the fine middlings or dust.

VICTORIOUS CASTLES

As with round tower and great hall and
maid to be kissed,
With a star guarded, fabulous shadow
for tryst,
Majestic in sunshine, romantic in mist,
Stand the wheat storage castles of
Kansas.

Steadfast in tempest, scornful of Mars,
In a world's midnight, serene as the stars,
Spelling victorious ending of wars,
Stand the wheat storage castles of
Kansas.

KUNIGUNDE DUNCAN.

ETYMOLOGY LESSON

YOU may have wondered idly, sometime or other, just how the purified middlings of durum wheat came to be called semolina or why the "farina" for other hard wheat middlings. Well, it's just one of those things. "Molina" in the Latin language (and Spanish, too) means "mill," and the office etymologist conjectures that molina is the root word for our English word "molar," or, more delicately, grinding tooth.

Farina, Mr. Webster says, is an example appropriation by the English language from the Latin language of the word meaning, in Latin, "meal or flour," coming, in turn, from *far*, a sort of grain akin to barley.—P. L. D.

WHEAT SOWED UNDER FIRE

Coal mines, iron and steel works and chemical factories are the main "crops" of the Donbas, a typical Soviet industrial area. There are, however, hundreds of collective farms that provide the workers with food. When the Nazis retreated from this region they wrecked every farm as thoroughly as they destroyed industrial enterprise. Restoration of farming began almost before the invaders had gone. Farm workers, often under enemy artillery and aerial bombardment, and in spite of the shortage of tractors and horses, sowed 750,000 acres of wheat last spring. The hardships of the harvest campaign were even greater. The Germans did everything they could to hamper field work and to leave the Donbas without bread for the winter. The Luftwaffe peppered the fields with incendiaries and bombed the farmers while they worked, so that shelters had to be dug in the fields. But the crops were gathered, and for the first time in two years of German occupation the Donbas received its own bread from its own farmers.—*The Miller, London.*

Buckwheat cakes spread with buckwheat honey—that's the next thing to going straight to heaven. Buckwheat's frail, orchid-like flowers of the bee-sweet odor provide a honey, Parnassan. We like the idea that the self-same blossom giving the honey, dark as rubbed walnut, can beget the dark grain blessed with the delectable flavor that comes to greatest power baked into a pancake.—Clementine Paddleford in Gourmet.

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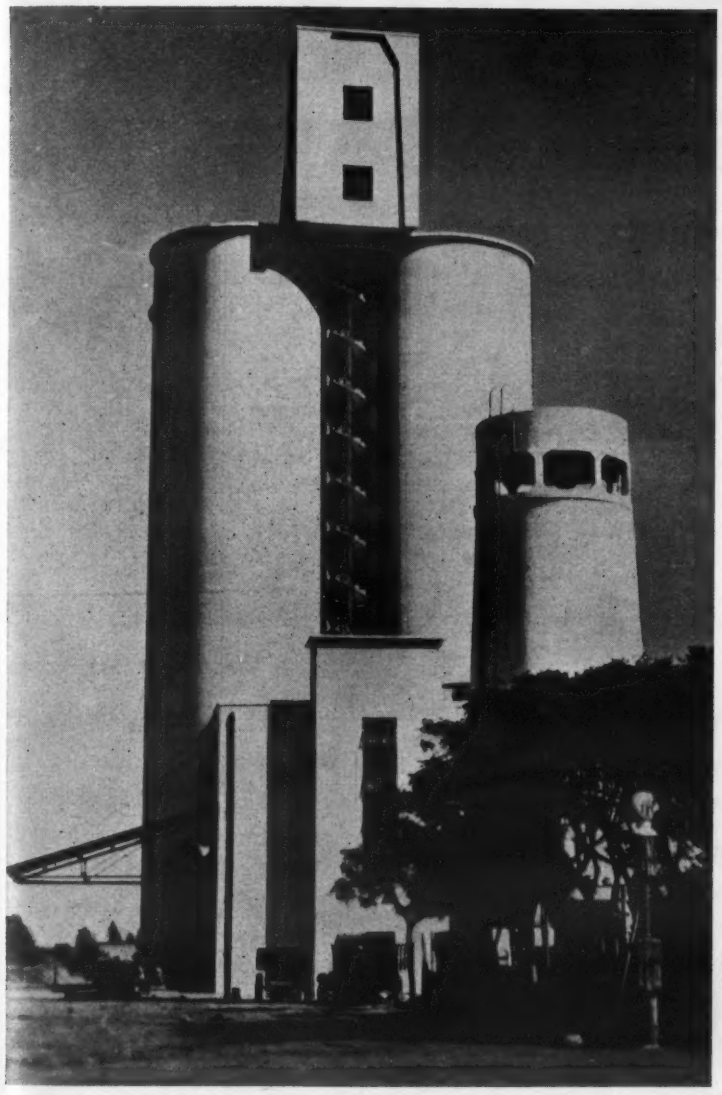
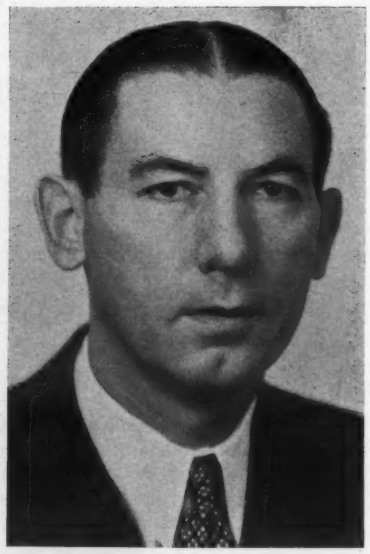


Grain Marketing in Argentina

THE elevator shown at the left is typical of the many plants being installed in Argentina in that country's effort to modernize its grain-handling facilities. Such elevators are few in that country today, however. Dr. J. A. Shellenberger, now a member of the staff of the department of milling industry, Kansas State College, is the author of an article in this issue of this journal which deals with grain marketing in Argentina. He spent the past two years in that country supervising research in the grain and milling industries.



Dr. J. A. Shellenberger

In this Issue: Convention Reports

AS in years past, reports of the conventions of the Association of Operative Millers and of the American Association of Cereal Chemists are contained in this issue of this journal. Three of the leading papers presented at the operative millers' convention are presented in their entirety.

Each year the two technical associations connected with the flour milling industry meet to report the results of laboratory and mill research, to plan research projects for the coming year, to renew old acquaintanceships among their coworkers and to make new acquaintanceships.

This exchange of knowledge, ideas and opinions in and out of the convention sessions is one of the contributing factors of progress in the sciences of milling technology and its allied science, cereal chemistry. Often the two groups find it very much to their mutual advantage to exchange the results of their findings.

IT'S NO JOKE

As a matter of fact, the reuse value of the cotton bag is a very serious business, which has made it a most essential item in a multitude of homes—regardless of locality.

Since 1885, the year Percy Kent first manufactured high quality cotton bags, we have recognized the great merchandising potentialities in their reuse feature. We have pioneered the field of good bag design to create for our customers a wealth of sales-building ideas and consumer preference.

During these busy days we are working overtime to keep the high standards of Percy Kent quality at the service of our friends everywhere. And for tomorrow—we'll be ready with new design developments to meet changed demands for the old stand-by, the cotton bag.

The ultimate consumer isn't the only one who prefers the cotton bag. Milling production experts know that because it is easier and faster to pack, stack, load and unload, the cotton bag contributes to increased mill efficiency.

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An Industry Problem . . .

POSTWAR MANPOWER

By Paul L. Dittemore

Technical Editor
THE NORTHWESTERN MILLER

IN his address at the annual convention of the Association of Operative Millers, Carl N. Arnold, the retiring president of the organization, said that the chief problem facing operative millers today is the shortage of labor and supervising personnel. "We operative millers must plan and provide means and methods to take care of this problem when the war is over," he declared.

There are many persons in the milling industry today who believe that the industry will not find relief from its acute labor shortage with the close of World War II. Those persons advance the following reasons for their opinions:

1. Polls conducted by opinion research organizations indicate that about 50% of the veterans plan to find different jobs from the jobs they held before going into the armed services. Many of the men have received vocational training in skills or trades different from those they worked at as civilians. Warfare today is highly mechanized and thousands of young men have learned new trades or skills, such as radio, diesel engineering, aircraft operation or maintenance, photography, and many other highly skilled occupations in mechanics, and electronics.

2. The older men who were called back to work in flour mills, or men who remained on the job after having passed the normal retirement age will want to retire after the war's close. Because of the induction of younger men into the armed services, the average age level of those employed in the milling industry has increased during the past two years and a significant percentage of all persons employed are in the higher age brackets.

3. Many of the women now employed in the milling industry will want to return to their peacetime occupation—housekeeping—upon the return of their menfolk from the war. These women took jobs in flour mills purely as a wartime emergency and their thinking all along has been that "I don't intend to stay on this job when my husband returns. I'm going back to housekeeping."

4. The postwar demand for flour and other cereal products will continue after the war. From the best available sources, including the Federal Reserve System's production index, flour production, it is predicted, will remain at the 113 index, as compared with a normal peacetime production index of 100. Flour exports to Europe will continue for several years after the war until such time when European mills have been reconditioned, rebuilt and put back into production.

With those logical arguments as a basis, many in the industry today are asking: What is the flour milling industry doing, or what does it plan to do about obtaining replacement employees for those who will be leaving their jobs, plus additional employees to man an industry which today admittedly is "short-handed"?

Large milling firms, such as General Mills, Inc., Pillsbury Flour Mills Co., Commander-Larabee Milling Co., International Milling Co., and others are making plans operative within their own companies, of course. General Mills, Inc., for instance, has set up an organization to plan the re-employment of its 1,750 servicemen and on May 1, 82 of their former employees who have been detached from the services by medical discharges or other causes had rejoined the company.

A reindoctrination training program has been set up for men and women who left the Pillsbury Flour Mills Co. to enter the armed services. The program is designed to meet the individual needs of the specific employees who return to the company.

The Selective Service act guarantees a man who has been inducted the right to the job he was holding down at the time of induction, plus any advancement or promotion benefits that might have come to him, had he remained on the job. The companies cited above (and others not specifically mentioned) are going further in their sincere attempts to rehabilitate their returning veterans. The executives of those companies have an eye to the future and probably would admit that it is to the mutual advantage of both employee and employer to obtain the returning veteran's services after the war. The employers hope to obtain more than the average 50% return of servicemen to their peacetime jobs.

EMPHASIS UPON YOUTH

The armed services have placed an emphasis—and a premium—upon youth. It has been estimated that approximately 20% of the men in our army, navy and marine corps are young men who did not hold down jobs that might be classed as "permanent occupations" before they were inducted. For those young men returning to civilian life the problem will not be one of returning to their jobs, but a more important problem, that of finding a job. And they're going to be in a position to be pretty discriminating.

Industry, too, is going to place a premium upon youth in filling jobs for the same reasons that the armed services showed a preference for youth, plus one other factor, that of "longevity of employment," as the employment counselors describe it. If an industry can obtain a man who will stay with them for 20 years, they're going to hire that man in preference to one who will stay with them for 10 years for the obvious reason that training of new employees—employee turnover—will be reduced.

Competition for the younger men is certain to be keen. The heavy industries, including the automobile, stove, refrigerator, radio, and other consumer goods manufacturers have immense back-logs of orders for their products that are not now being made for civilian purchasers. Mr. and Mrs. John Public are going to have a lot of money to spend after the war for things they have been unable to buy during wartime. The manufacturers are going to do their best to see that those wants are satisfied.

It is admitted that probably many of the jobs in those heavy industries will be relatively short-lived, but for a period of from two to four years after the war, peacetime production records will rival wartime production records. Those industries will have some potent selling points to offer their prospective employees — high wages, good working conditions, short hours, etc., and many of the returning veterans will answer the urge to "get in on those high wages," etc. Many of them can use their army-acquired skill in radio, mechanics, and other vocations to great advantage and will be able to go right into a high-paying job without having to go through a training period or apprenticeship.

MILLING INDUSTRY AT DISADVANTAGE

Those heavy goods and consumer industries will be on the same labor market with the flour milling industry. Their employment problems will be about the same, and many observers believe that under existing conditions, the flour milling industry will not have the bargaining advantages in the labor competition.

What should the flour milling industry do to improve its position in the labor market during the postwar period?

Establishment of a vocational training school for operative millers is suggested as one inducement to returning veterans to enter the industry. A vocational training school would equip the new employee with the rudiments of the art of milling and the short course in operative milling could be designed to be completed in one year. That vocational course would not make head millers out of men who did not know a roll stand from a hand truck before taking the training, but it would—or could—be made to give the men a good grounding in the fundamentals. A number of flour mill superintendents agree that much could be taught in a year's time.

The correspondence course for operative millers, offered by the Dunwoody Institute in co-operation with this journal, is designed for persons employed in mills and those enrolled are expected to use the mill in which they are employed as a laboratory.

The course in milling technology offered by the Department of Milling Industry at Kansas State College, Manhattan, is a four-year collegiate course leading to the degree of bachelor of science in milling industry. The number of persons who would be interested in taking the full four-year college course would be relatively small, it is believed, in comparison to the number of persons who might be interested in a short course. The facilities at Kansas State College are such that in normal times enrollment in the milling department has been limited to about 120 students. The mill, a small 125-sack unit, and the laboratory facilities are the limiting factors. Kansas State College may offer a short course after the war but its facilities would not permit training of the number of men needed by the industry at large.

SHOULD SEEK FEDERAL ASSISTANCE

A suggestion has been advanced to seek the assistance of the U. S. Veterans Bureau and the U. S. Office of Education in the establishment of a vocational school for operative millers. An alternative might be the establishment of such a school by the Association of Operative Millers, the Millers National Federation, a mill manufacturing company, a state college or university, or any combination of those organizations and agencies working co-operatively for the benefit of the industry as a whole.

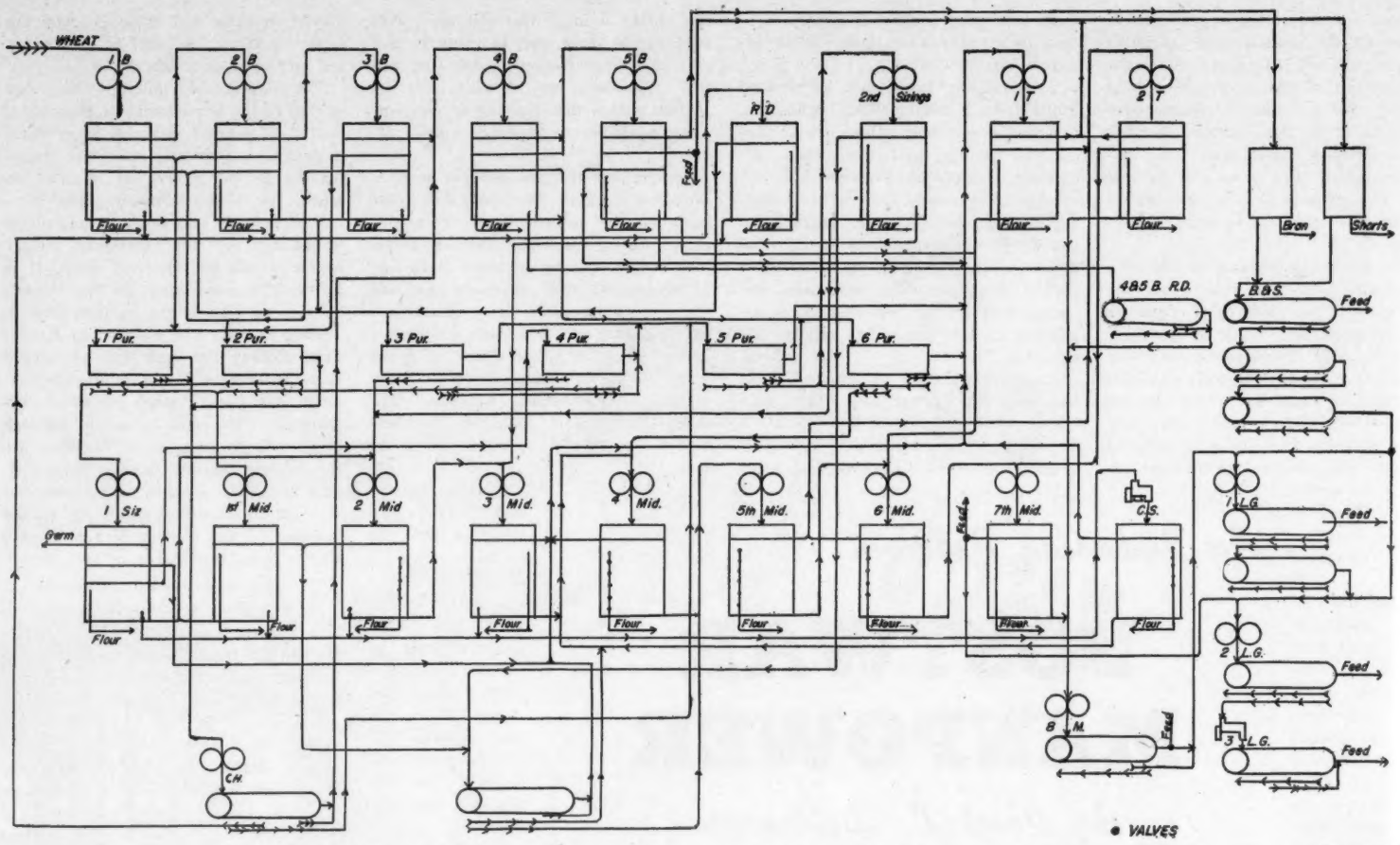
One operative miller suggests purchase or leasing of "at least" an 800-sack mill to be used as a laboratory. A mill of that size, the miller points out, would be sufficiently large to afford training in the various phases of operative milling, plus the added advantage of conducting research problems in milling on a commercial scale.

Staffing the mill with instructors would be the least of the problems raised by such a venture. There are innumerable superintendents in the industry today who have established enviable records by their abilities to train young men and train them thoroughly. A man who has as his specialty some particular phase of operative milling could be placed in charge of that work in the vocational training school. These men could easily outline a course of study to include "book work," lecture courses and special laboratory courses in addition to the work in the mill which would complete the course and make for a well-rounded program of training for cub millers.

A REHABILITATION PROGRAM

The U. S. Veterans Administration has now set up a rehabilitation program for returning veterans who wish to take advantage of some vocational training program or who wish to complete their education that was interrupted by their induction. Many of the young men now in the armed services did not get to complete their high school educations and hundreds of thousands of other young men did not complete their college work. A great many of those will want to continue their academic studies while others will want only some vocational training course. The government has made plans to finance the costs of such academic or vocational training for the veterans.

(Continued on page 22a.)



Shown above is the flow sheet used by the author in his study of the effect of close grinding on flour quality.

Owen J. Gabbert

EFFECTS OF CLOSE GRINDING

BY OWEN J. GABBERT

Superintendent, Dan Valley Milling Company

EDITOR'S NOTE. *The following report by Mr. Gabbert was presented as one of the papers at the annual convention of the Association of Operative Millers held in St. Louis June 5-9.*

THE question of close versus high breaking has always been one of interest and debate among millers. What I should call close breaking would be to set the rolls to obtain the following percentage break extractions through an 18-mesh wire cloth: First break, 25%; second break, 41%; and third break, 35%. I do not break by percentages on the fourth and fifth breaks.

By breaking to the above-mentioned extractions, the miller will produce considerably more fine middlings and more break flour, both of which are undesirable.

There will be a noticeable increase in the amount of fine particles of bran in the middlings. When the bran has been pulverized and gets into the fine middlings, it is impossible to get it all out and the result will be a poor color of flour and a higher ash flour. Most of the fine middlings will miss the first middling rolls. The cuts stock is sent to a redust sifter and the flour from that stock is always higher in ash and poor in color in addition to being very "ragged" in appearance. The net result will be a lower percentage of patent flour with an accompanying increase in the amount of clears.

There is no way we can avoid making cuts stock or break flour. But there is a way that we can reduce the amount of break flour and that is accomplished by breaking higher.

I prefer running the breaks on the following extraction percentages: First break, 17 to 18%; second break, 37 to 38%; and third break, 26 to 28%. By breaking on the above percentages of extraction, there will be enough good quality middlings left on the bran. By careful breaking on the fourth break, one can obtain a very nice quality of middlings to send to the purifiers and from there to the quality roll.

This point is where the miller can control the load in the middle of his mill. Caution must be exercised, however, to avoid too close grinding on the fourth break in order to prevent shredding the bran. The fourth break is where a miller can run into ash trouble in a hurry.

Grind just close enough on the fifth break to clean the bran, being careful not to shred it. If the stock going to the fifth break is ground too closely, about all that is accomplished is to put a large amount of dirt on the tail end of the mill and the result is an increase in the flour ash plus dirty, specky flour.

Most generally when the yield is up, it is going out by way of the shorts and not the bran. Below are the percentages of ash obtained on a 60% patent flour by close breaking. The results of 10 separate tests are as follows:

The wheat used in these tests was Kansas hard winter wheat having a protein content of from 11.90 to 12.10% protein. All ash percentages are reported on a 15% moisture basis.

1.	.372	6.	.370
2.	.375	7.	.374
3.	.368	8.	.372
4.	.374	9.	.374
5.	.375	10.	.370

The above test runs were made on different days. The ash on the 40% clear flour from the same samples ran as follows:

1.	.506	6.	.504
2.	.508	7.	.510
3.	.514	8.	.506
4.	.510	9.	.512
5.	.508	10.	.508

The following ash analyses were obtained from a 65% patent flour by setting the first break at 17% extraction; second break at 38% extraction; and third break at 27% extraction:

1.	.346	6.	.350
2.	.348	7.	.344
3.	.344	8.	.348
4.	.346	9.	.346
5.	.344	10.	.348

The ash percentages obtained from the 35% clear flour were as follows: Close grindings.

1.	.478	6.	.480
2.	.480	7.	.476
3.	.482	8.	.476
4.	.480	9.	.478
5.	.478	10.	.482

Notice particularly that when the first break was set at 25% extraction, second break at 41%, and third break at 35% the ash was about three points higher on both grades of flour than it was when more open breaking was followed. Another point that should not be overlooked is the fact that it is possible to obtain about 5% more patent flour with an accompanying decrease in the amount of clear flour when the breaks were set at 17% extraction on the first break, 38% on the second break and 27% on the third break.

In determining the percentages of extraction from the different breaks, we use 100 grams of break stock placed in an experimental sifter. The sifter is run for 15 revolutions, then the throughs of the 18-wire sifter are weighed and that amount subtracted from 100.

We do not run the sifter on a time-setting because it is impossible to get it to stop at any definite number of revolutions. If the sifter is allowed to run a few more than the specified 15 revolutions, the results will not be the same but will always give a higher percentage of extraction.

The flour was much brighter and cleaner on the higher breaking system. We tried breaking on different percentages but found that we got the best results on open breaking. The yield was about the same on open

(Continued on page 28a.)

WARTIME PERSONNEL PROBLEMS

By ARMAND H. ROUSSEAU
Fisher Flouring Mills Co., Seattle

EDITOR'S NOTE.—*The following article is from an address prepared by Mr. Rousseau for delivery at the annual convention of the Association of Operative Millers, St. Louis, June 5-9.*

OPERATION of any industrial enterprise during wartime presents added problems and responsibilities. Intelligent management of personnel and harmonious relations with that personnel always have been important but never so important as now. When the history of World War II is written, historians will agree that American capital, American factories and American workers, unhampered by air raids, were deciding factors in bringing this conflict to a victorious conclusion. They will say that the enemy was overwhelmed by our production of weapons of war and essential civilian goods. A certain, though perhaps costly, victory for the Allies is guaranteed by the all-out effort being expended by the United States. Our contributions are many: Superbly trained men, superior equipment, high morale among all branches of the armed services and intelligent leadership are but a few. However, our enemy has shown courage and cunning and everything indicates that he will not surrender without a terrific struggle. America's greatest weapon, and it is a powerful one, is her ability to produce. Uninterrupted Production at a Maximum Level Is the Order of the Day. Merely wishing will not bring this about. It will require the best efforts of both labor and management. Let us critically examine some of the personnel problems created by wartime conditions.

THE DRAFT PROBLEM

After many months of uncertainty and confusion, our selective service system is now running in high gear. Employer and employee alike now understand exactly where they stand. Although the following information has largely appeared in the newspapers, it is repeated here for it represents the opinion of a selective service official. While conditions may vary slightly in different sections of the country, an over-all picture appears to be this:

1. Very nearly all physically fit men under 26 will be in the armed services. A few key men in the milling industry may be deferred temporarily, but this will only be in rare cases, probably less than a half dozen men for the entire industry.

2. All men 26 through 29 will be reclassified by early fall. Deferments will depend almost entirely upon local boards. Bona fide operators in the milling industry such as second millers, grinders, bolters and wheat processing men will most likely not be drafted. Semi-skilled men such as wheat unloaders, car loaders and packers probably will be drafted in time. Selective service officials have made it clear that all men in this age group have been merely "loaned" to industry. These men may be recalled at any time. If the war continues as long as two more years, nearly all physically fit men under 30 will see service.

3. Men over 30 in all essential industry, milling included, will not be considered for some time—very probably not at all.

4. Men of any age in 4-F who are employed in essential industries such as milling will not be drafted. The heads of the armed services feel they have reduced physical requirements to the minimum.

5. Men over 30 through 37 who are not in essential work such as beer tavern operators and the like and who refuse to change to more essential occupations will be drafted regardless of the number of dependants.

As I write, the great invasion of continental Europe has not yet begun. Further withdrawals from industry will be largely governed by the replacements made necessary. Selective service officials say this represents the picture today and for the next six months. Naturally they are reluctant to predict what the future may hold. The course of the war may necessitate revisions in policy from time to time. The manpower requirements of the army and navy will be determined by our casualties and by the duration of the war. It has been demonstrated that a man, though physically fit, may become mentally ill if exposed to battle conditions too long.

The local board has been given wide powers, especially in borderline cases. Employers must not forget that the right of appeal still exists. In general, employers cannot count on keeping physically fit men under 30 years of age indefinitely.

THE ABSENTEE PROBLEM

It is difficult to estimate just how many lives and limbs will be lost in this war because of "too little and too late." Absenteeism, because it curtails production, certainly will prolong the war unnecessarily. A practical approach to this problem should be taken because proper investigation will show that the reasons for absenteeism are sometimes justified and can be corrected. If each case is carefully studied, the cause can be remedied. Following are some of the reasons for absenteeism that I have observed and some suggestions for their solution:

1. I found that the income tax return bothered a lot of people since many were making a payment for the first time. As a remedy, I encouraged all the men in the mill to seek aid from an assistant in my office. This man familiarized himself with the technique required. Forms were filled out on the job for any one who wished the service.

2. If a man works a six- or seven-day week for many months, he is certain to accumulate business affairs that need to be looked after. It has been my experience that these "business transactions" can quite often be handled by mail. You will find that many man-hours could be saved if only workers realized the convenience of a checking account. Many have the feeling that only "rich folks" have a checking account. In one case of absenteeism I investigated, I found the man lost a day's work because his wife was ill and was unable to make the regular payment on the mortgage. When the advantages of a checking account were demonstrated and he was instructed in the writing of a check, I believe this man left my office very happy indeed.

3. It often occurs that absenteeism arises from a necessary visit to a doctor or dentist. It has been my policy in the handling of men never to refuse a request for a day off to a man if it is humanly possible. This will encourage everyone to come to you and discuss his problem. If a man has a just reason for staying away from the job it will be better to plan for his replacement ahead of time instead of frantically trying to get someone to fill his unexpected vacancy.

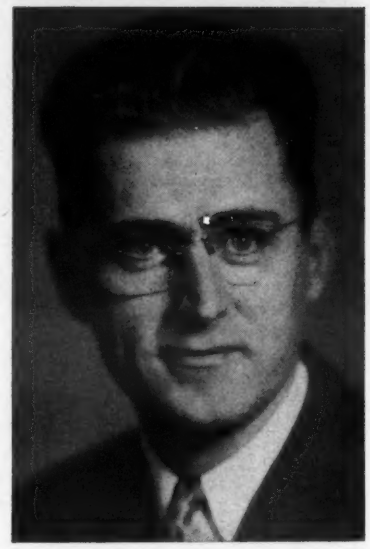
4. The most annoying cause of absenteeism is that "morning after" feeling. My method of approach to this problem is to tell the man involved that we managed somehow to get along without him while he was gone so we will continue to do so for the balance of the week. Sometimes the man may be badly needed but if he is broken of the absenteeism habit there will be an ultimate gain.

THE MORALE PROBLEM

A fundamental law of economics applies to the movement of all commodities—the law of supply and demand. Since labor is a commodity it is subject to this law. Large supply is always associated with poor demand. Scarce supply is always associated with good demand. At present the buyer, in this case the management, can expect to face conditions favoring higher prices. The seller, in this case the worker, will be in a stronger position than normal to sell his service for a higher price. Also, the worker is likely to be more critical of poor working conditions. Our government, in an honest attempt to halt the inflation spiral, has frozen wages. This comes at a time when, due to his economic status, the worker ordinarily would be in a strong position to bring pressure upon the buyer of his services. The recent months have fostered uneasiness and discontent among the working classes—especially the highly organized groups.

The organization that is high in morale will have the smoothest sailing during these troubled times. What is morale? My definition would be a situation in which there is mutual respect, confidence and understanding between employer and employee. Morale is something money cannot buy. You either have it or don't have it. It takes months, yes, even years to build it into an organization.

Building of morale is the accumulation of a great many "little things" that the supervisor or management can do for the worker, very often at little or no cost. Following are some ideas that may be useful.



Armand H. Rousseau

1. Make an honest effort to control dust in bad locations. Don't just "talk" about it year after year. Procrastination on the part of management is especially irritating to workers. The milling industry has a poor record for diseases of the lungs.

2. Supply clean locker, lunch room and toilet facilities. In any size plant some one must be held responsible for keeping these rooms in wholesome condition. In larger plants a full time janitor is a necessity.

3. Make provisions for the sick worker. Provide sick insurance. Visit the sick. At our plant the revenue from candy and gum machines guarantees a bedside radio for all sick employees.

4. What is the attitude of the supervisor toward his workers? The man who is successful today in handling personnel must show a genuine interest in his workers. Don't be friendly to the point of being a bore, but don't be a snob either. In my opinion, the supervisor of today would have been a failure 30 years ago. Similarly, the "boss" of years ago would be decidedly unable to cope with the situation today. The present-day methods for getting results demand an entirely different executive technique.

5. By precept and by example show everyone you believe in leadership instead of drivership. The captain who leads his troops into battle gets the results.

6. The good will of your workers is something precious, guard it well.

7. Nothing is harder on morale than bad management. As an example, let me cite an outstanding case on the east coast. One year ago conditions at the Brewster Aeronautical Corp. plants at Long Island City, New York, and Johnsville, Pa., were anything but pleasant. The difficulties between labor and management, the absenteeism and the poor production records would have been excellent propaganda material for Dr.

(Continued on page 25a.)

Postwar Mill Control Planning

By Warren F. Keller

Production Superintendent, B. A. Eckhart Milling Co.

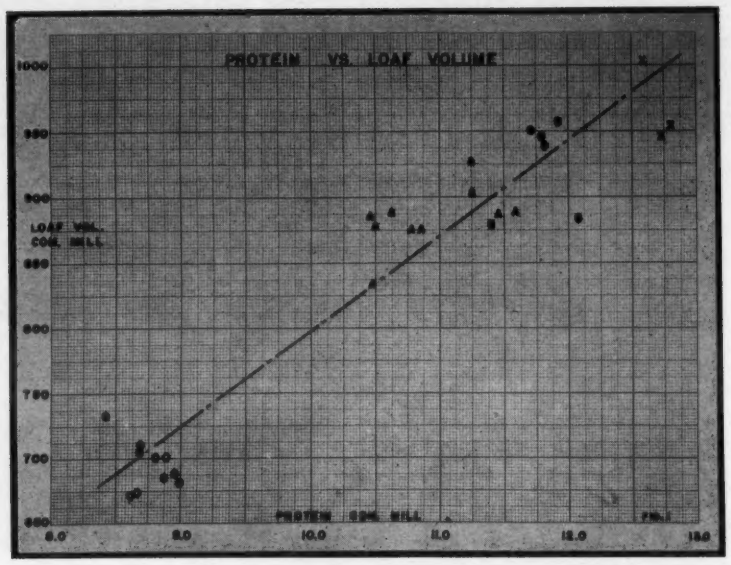


Fig. 1.—The relationship between protein and loaf volume in commercially milled flours.

EDITOR'S NOTE.—*The following article is adapted from an address by Mr. Keller at the annual convention of the Association of Operative Millers held in St. Louis June 5-9.*

POSSIBLY some of you are more fortunate than we are in having enough manpower to go around in your plants. If you do, you are extremely lucky and possibly your only headaches are in doing a good job better. Our mill is not among the favored in this respect so we are kept busy trying to keep up with the whims of the sales department. It has been our pleasure or misfortune during the past year to grind a little bit of everything, including rice and popcorn.

Mill control is a very broad subject to discuss and can include almost anything you wish to mention in connection with a flour mill. It is not intended that we are stating that, through lack of manpower, we have thrown out the term "mill control" in our plant. Some of the experimental methods that are to be discussed, however, are out of the question at this time. Our plant is set up in three units, a hard wheat mill, a soft wheat mill, and a rye unit. On the hard wheat mill, we grind both hard winter and spring wheats, and on the soft wheat mill, sponge, cooky and cake flours, and everything on the rye unit. With such varied operations, and with the quality of help now available, one's existence hangs around the term "mill control."

There are many points in control work, such as maintenance, lubrication, handling, equipment, personnel, cleanliness, planning, accounting, etc., that are all very important, and any one of them is worth subject matter and time, as a paper of their own. Soft wheat milling offers many very interesting outlets for study in manufacturing a quality product. It seems that in both hard and soft wheat milling the first consideration is the type of wheat to be milled. There must be certain basic facts and standards established for each type of mix. The use that the flour is going to be put to is the first factor to be considered and means to us that practically every customer demands a tailor-made flour. Regardless of whether it is a soft or hard wheat mix that is being made up, the usage will determine the type of gluten that must be developed into the mix.

Figure 1 represents a series of five different wheat types milled on our mills which are all baked to optimum conditions of each particular type. The plot shows that under optimum conditions almost any protein type or level will bake to approximately the same volume per percent of protein. This can only be used to ascertain the fact that the sample of wheat is up to standard for possible dough development. If samples come up to standard under optimum conditions it is then possible to fit them into mixes that the handling properties of the particular sample fits into. If a sample of wheat is up to standard as to protein quality and can be fitted into the scheme of mill mixes, then comes the time to decide if the milling properties are acceptable.

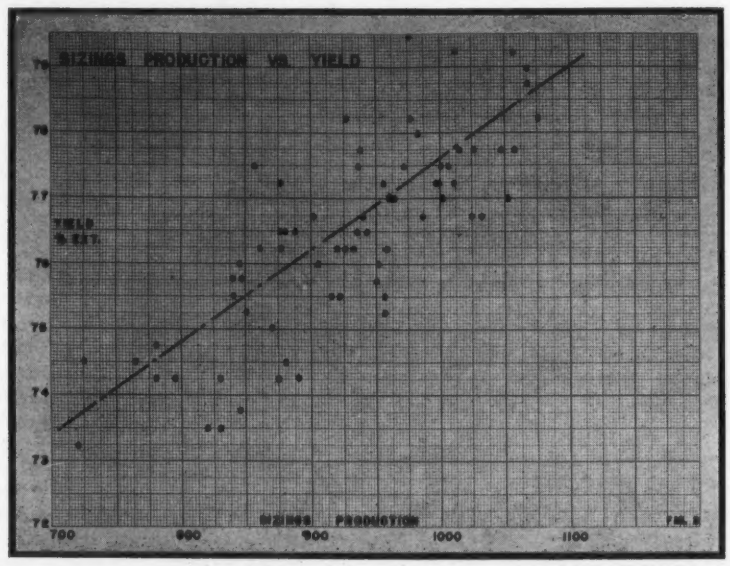


Fig. 2.—The relationship of sizings production to flour yield.

At the present time, we have the following factors that are all definitely very important and all must be considered independently and also collectively. Protein quality has been mentioned first, as we feel that the first consideration is a quality product, the following factors are economic and, of course, must be given careful attention. It would seem that yield is possibly the most important economic factor, and if any sample of wheat fails to produce a satisfactory yield it should be rejected regardless of its other virtues.

Figure 2 represents a chart of several samples of wheat milled on an Allis experimental mill in which an attempt has been made to analyze why one sample of wheat produces more flour than another. The sizings production is the weight of sizing middlings produced on the first three breaks in an experimentally milled sample and is plotted against the yield of flour of that sample. It is shown that in this set of samples, the amount of sizings produced gives a very good estimate of the yield of flour that can be expected.

Figure 3 goes back to the same set of five different wheat types milled on our mills. These samples were also milled on an Allis experimental mill and Figure 3 shows the relationship of the yield of flour on the experimental mill and from the same samples on the commercial mills. These samples were taken over a period of several months and the operator of the experimental mill worked independently of the commercial mill. It would seem that from Figure 2, where we have reason to believe that there is a relationship of why we should expect a yield, and from Figure 3 where again there is a relationship between experimental and commercial millings, we could do a lot to develop experimental milling as a definite means of economic mill control in regard to flour yields.

In wheat control, ash is possibly the next factor of importance. Today all of our flours unfortunately and possibly unwisely are sold to ash specifications along with the other specifications. Thus, any sample of wheat should be selected for the mix on the basis of ash as well as yields. We are always looking for wheats that will produce lower ash flours, but there are peculiar instances in this also. We have found that certain samples will produce a relatively low ash straight grade, but regardless of the amount of clear taken out, it is difficult to produce a low patent ash, and also some higher ash straight flours come down in ash rapidly as clears are removed. From this it is apparent that ash is not always laid down the same in different samples of grain, and proper experimental analysis calls for consid-

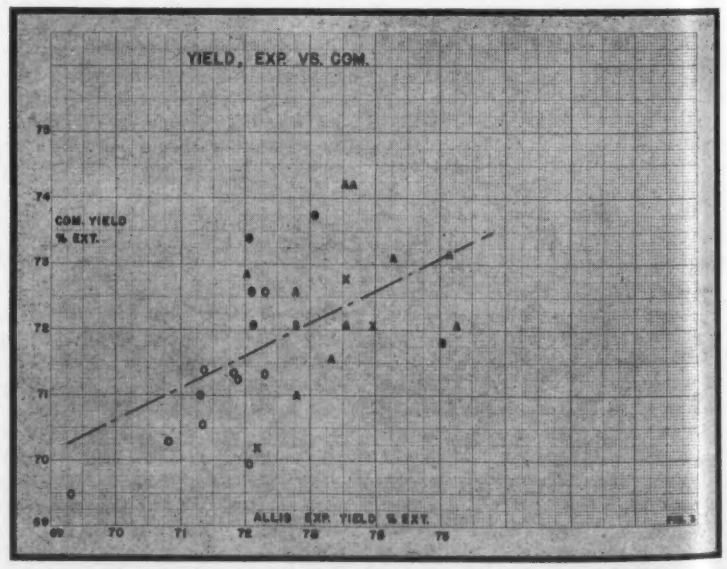


Fig. 3.—The relationship of flour yield between commercially and experimentally milled wheat.

eration of both patent and straight grade flours to properly allocate satisfactory samples to wheat mixes. Figure 4 is a plot of the before mentioned samples, and will show that the trend is definite enough to warrant consideration and study in ash control at the time of wheat selection rather than to wait until it is on the mill and they try to worry the product into ash specifications.

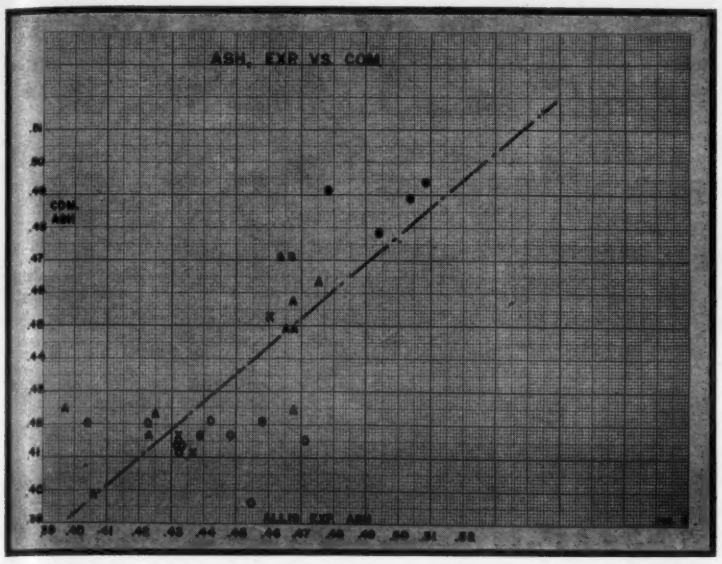


Fig. 4.—The relationship of ash in experimentally and commercially milled flours.

We have already discussed protein and its type control, but it is pointed out in Figure 5 that there is a trend in experimentally milled samples that shows the relationship is good and should be a dependable indication of what will be obtained in commercial milling. Of course, this does not show anything about protein recovery and this factor should be studied just as seriously. At times there are very definite premiums on protein and if the flour milled from a certain wheat mix falls short in protein recovery, it can be a very adverse economic factor. It is also apparent that protein is not always laid down in a definite pattern in wheat mixes or samples and this fact can alter the protein recoveries that are expected to milling for patents and clears. In this series of five different wheat mixes that have been studied, we have a very broad range of wheat types and proteins as is evident from this plot. From this it is apparent that the tempering or conditioning of the sample for milling is very important. There seems to be no set rule for length of conditioning time or moisture added, but both the experimental and commercial millings in these plots were handled to the best judgment of the operators. It does seem, however, that careful experimental work should teach us a lot beforehand as to how or what the best conditioning requirements may be.

Figure 6 is a plot of the loaf volumes on this set of samples, and shows the trend of experimental millings and commercial millings. It must be said that in each case, the doughs were given optimum treatment which does not necessarily mean that the experimental sample was handled the same as the commercial sample. The characteristics of the gluten, however, must be the same in each case for milling, for as far as is known, the method of handling cannot change or alter gluten character.

The data for the plots shown is not offered in this paper, as we are not trying to prove anything, only to stimulate thinking on our postwar activities. All of this work has actually been done and is authoritative data, however.

There are many more factors in mill control and those that are vastly more important in economic proportions, but it is felt that these things are basic for all of us and any work or progress along these lines will be helpful. We might also consider the factor that this type of work and any follow-throughs on it would send the problem right back to the producers. If we fail or refuse to use the raw material that the producers give us to work with, they are going to become much more conscious of quality control in the field, and they in turn will go to the plant breeders and the chemists aiding the plant breeders demanding wheat varieties of superior quality. Until we make these demands upon the producer, he is going to continue to grow such wheats as Chiefkan and Red Chief and Blackhull. These wheats have good agronomic characteristics, but have undesirable milling and baking qualities.

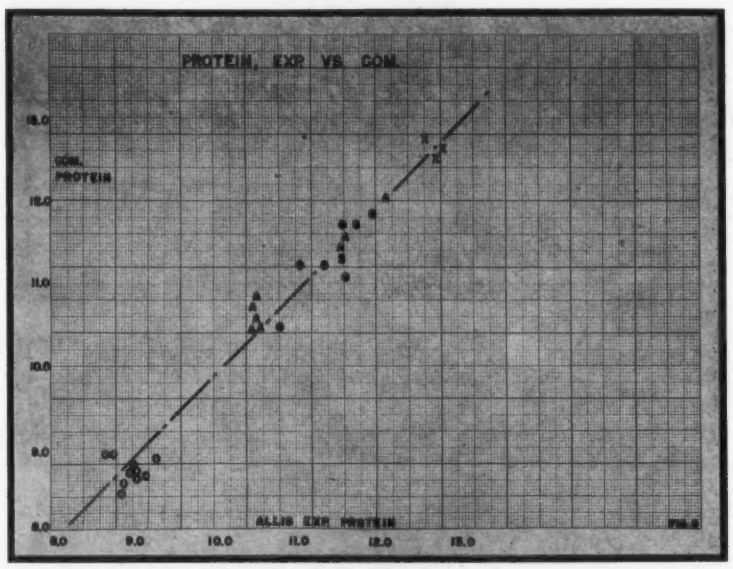


Fig. 5.—The relationship of protein between commercially and experimentally milled flours.

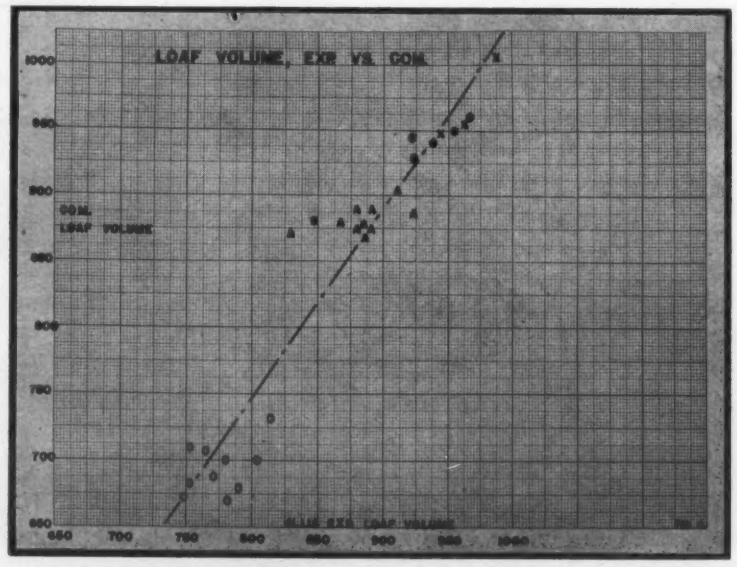


Fig. 6.—The relationship of loaf volumes between commercially milled flours and flours milled on an experimental mill.

Compare Analytical Methods for Vitamin Assay in England

LONDON, ENG.—At the request of the Ministry of Health, an investigation has been made into the merits of the various methods available for the determination of vitamin B_1 in national flour, in order to arrive at the most suitable procedures for use in chemical laboratories where food analyses are regularly made. A report by the Vitamin B_1 Sub-Committee of the Accessory Food Factors Committee of the Medical Research Council and the Lister Institute includes a comparison of chemical with biological and microbiological assays. The vitamin B_1 content of bread made from one of the flours was also examined in order to determine the effect of baking.

The flours employed were authentic specimens of national flour—*i.e.* 85% extraction flour as defined in the Medical Research Council's second report on bread (Medical Research Council, 1941). The bread was baked in a batch of 40 loaves of 2 lbs each by a usual commercial procedure. The loaves were sliced a few hours after baking and the slices placed on slatted shelves and dried at 37°. Drying was complete in two days, when the bread, crust included, was powdered in a laboratory mill.

Early work on which the biological methods are based is summarized in the Medical Research Council (1932) report: Vitamins: A Survey of Present Knowledge. The rat-growth method (as employed by Copping) was that described by Chick and Roscoe (1929). The rat-growth method (as employed by Harris), the rat bradycardia method and the "cure of convulsions" method were described by Harris (1940-41).

The literature relating to the original observations which led up to the fermentation method is briefly reviewed in the Medical Research Council (1932) report. The method used in the present investigation is that of Schultz, Atkin and Frey (1942).

In connection with the thiochrome method, the two procedures adopted by the sub-committee are given in full in an appendix, with references to the literature.

The Azo method used is that described by Platt and Glock (1943), and is based on the formaldehyde azo method of Kinnersley and Peters (1927) and Prebluda and McCollum (1936).

The results obtained in the collaborative tests by the various methods employed are set out, and show that all methods of estimation yield values which are in good agreement, especially for the flours.—*"Food Manufacture," London.*

——BREAD IS THE STAFF OF LIFE——

"FLOUR" IS MISNOMER

Soy flour, which is perhaps a misnomer and should have been labeled soy powder, or powdered soy (since it does not compare physically or chemically with wheat flour), should not be regarded as a substitute for some other ingredient. It seems rather illogical that soy powder, the best source of vegetable protein and containing four times as much protein as lean beef, twice as much as powdered milk, and twice as much as eggs, should be considered as a substitute. In my opinion, soy flour in food manufacturing is not a substitute for anything but rather a baking ingredient of immense food values, which when used in the proper proportions and with approved methods can "step-up" the quality of any bakery product in which it is incorporated.—*L. G. Trempel, A. E. Staley Mfg. Co.*

This picture shows one of the large terminal elevators operated by the National Grain and Elevator Commission of Argentina.

Grain Marketing in Argentina

By Dr. J. A. Shellenberger
Department of Milling Industry
Kansas State College

ARGENTINA'S position in the world grain trade is important. However, the full extent of any nation's contribution to the total world production of cereals is not always readily determinable. This is because inadequate statistical data on grain production, particularly in the Soviet Union and China, have in the past resulted in the release of "world" estimates which have included only about two thirds of the world's aggregate output. Fairly reliable estimates for wheat place the probable average annual world harvest in recent years at 150,000,000 tons or about 5,510,000,000 bus.* If this figure is acceptable, then Argentina produces approximately 5% of the world's wheat. Moreover, Argentina is the largest producer of linseed, and 7% of the world's corn supply is grown within her borders. In addition, barley, oats, rye, millet and birdseed are grown extensively. With the exception of wheat and linseed, the acreage planted to these various cereals has steadily increased throughout the past 20 years.

Much of the grain produced in Argentina is available for exportation; consequently, in the grain trade Argentina's position is more important than is evident by casual inspection of production statistics. In fact, on the average, during the 5-year period just prior to the outbreak of the war, 90% of the linseed, 80% of the corn and 50% of the wheat were exported. These figures may seem surprising in view of the fact that Argentina has a renowned animal husbandry industry that might be expected to consume most of the grain produced. It is not generally recognized elsewhere that most of the animals are entirely pasture-fed throughout the year, and thus, the domestic consumption of grains for animal feed is relatively low. In fact, the cultivation of cereals is thought of almost entirely in terms of export demand.

ARGENTINE SYSTEM UNIQUE

Grain production and marketing in Argentina differ in many respects from practices in other countries. Most of the land is held in large estates by estancieros who lease portions to tenant farmers for grain production. The average tenant farmer has very little capital and usually no adequate grain storage facilities; therefore, he is in a poor speculative position.

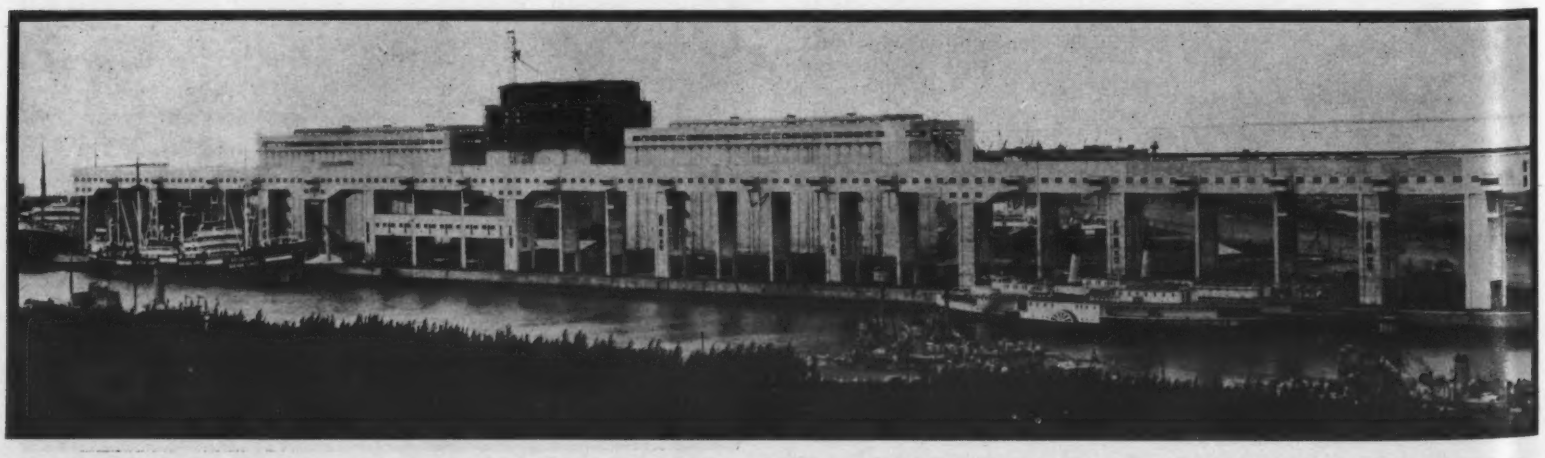
The farmer generally sells his grain to the camp dealer or general store which carries all kinds of supplies for the farm and has usually catered to the farmer's needs on a credit basis. Thus the storekeeper sells to the farmer on credit and at harvest buys the crop and a final settlement is made. Direct sale from farmer to miller or exporter is exceptional. Whenever the farmer has not obligated himself to sell to a merchant because of credit extended, he is free to deal with local tradesmen of various kinds, among whom there is usually keen competition.

The grain farmers almost always of necessity prefer to sell at a fixed price just as quickly as possible. Sales are made to wholesale dealers, "acopiadores" and agents or brokers, "corredores," and the purchaser assumes the responsibility for moving the crop from the farm to the shipping station. The grain exporters have buyers who make their purchases from the camp merchant or the "acopiadores." According to the National Grain and Elevator Commission†, there were in 1941 approximately 200,000 producers of grain, some 3,600 grain traders, and 46 exporting companies. Of this latter group, five firms handled 75% of all the exported wheat.

The government has made efforts to encourage the organization of grain producers into co-operative societies for the purpose of joint operation of marketing facilities. But progress has been slow in Argentina and in 1938 there existed only 106 agricultural co-operative societies which dealt in the grain trade. The total membership of these organizations was 3,200 or 17.7% of the total producers‡. Almost all the co-operatives' storage facilities are sheds in which the sacked grain is stored and the identity of each lot retained. The lot is sold on order from the owner-member of the co-operative. The pooling system for storing grain is practically nonexistent.

COUNTRY ELEVATORS ARE SCARCE

The scarcity of country or farmers' elevators in Argentina is immediately apparent to one accustomed to traveling in the grain growing regions of the United States or Canada. The establishment of more country elevators is generally considered to be a desirable undertaking and the government has plans along this line. The fact is that the operation of country elevators has not been a particularly profitable investment and many business failures are recorded.



Shown above is one of the elevators under construction by the National Grain and Elevator Commission of Argentina. At the outbreak of World War II, construction was discontinued and will be resumed after the close of the war.

There are several factors which make the operation of small modern grain elevators difficult to manage profitably. Probably the biggest difficulty is to bring about a change from sack to bulk handling of grain. The business of importing, distributing and selling burlap sacks is large and apparently profitable, and no effort has been spared by the business interests to perpetuate the prevailing system. At present the method for marketing grain in the interior is based on sack handling. Grain in bags is always quoted at higher prices than similar grain in bulk and this price differential is not proportional to the value of the bags. Another consideration is that considerable labor is involved in the bag-handling of grains, and the installation of equipment designed to eliminate some of this work frequently brings on labor disputes and added operating expenses.

THE CROP MOVES RAPIDLY

Possibly another reason for the unprofitableness of country elevators is the desire on the part of grain dealers to move the crop as soon as possible to terminal elevators for exportation. Since there is practically no exchange or resale of grain to farmers at interior points, small country elevators are usually only in use during the actual harvest period. Notwithstanding these drawbacks, there are a number of very nice small elevators in the country, and as the trend away from bag handling of grain gains momentum further construction can be expected. The general pattern of grain storage throughout the world has been for interior elevator construction to follow the development of large export terminal elevators. The most recent examples of this sequence have been Russia and Australia where farmers' elevators, throughout the producing areas, have increased rapidly.

In addition to the present inadequate country elevator situation, the farm storage problem is complicated by the Argentine agricultural system. Tenant grain farmers cannot normally be expected to construct grain storage facilities upon land which they do not own. It is possible, however, that some improvement over present conditions may be expected since efforts have recently been made by the Department of Agriculture to provide plans for the construction of inexpensive farm storage bins, and provision has also been made for the granting of loans by the Banco de la Nación (Bank of the Nation) for certain types of farm grain storage construction.

There are at present 460 elevators in Argentina with a combined storage capacity of 1,200,000 metric tons of bulk grain or approximately 44,700,000 bus. Some of the terminal elevators are large and modern. Until fairly recently grain elevator operation was almost exclusively in private hands. However, in 1936 the National Commission of Grains and Elevators was created with the following functions: (1) To intervene in the grain trade, both domestic and foreign; (2) to develop and establish standards for the commercial classification of grain, and (3) to control the grain elevators constructed or bought by the government. This commission appears to have done a conscientious job in many respects, particularly in providing for bulk handling methods in connection with the elevator construction program and the grain grading and inspection systems. The F.A.Q., or fair average quality standard, still prevails, but efforts are being made to break away gradually from this system and to adopt fixed standards. The ordinary grading factors, such as test weight, foreign material, moisture, damage, etc., are included in the present system, but no permanent standards are established which fix the limits of these factors for each class of grain.

The National Commission of Grains and Elevators has a very ambitious program in which it is contemplated that all the elevators will eventually come under the control of the commission. Unquestionably, certain policies of the private grain companies have not always been in the public interest, but it is difficult to understand the need for a government monopoly of the grain trade. Probably the best interest of the grain producers would be served by governmental competition. At least to date, there is no precedent to lend encouragement to the proposition that the commission can operate elevators with greater efficiency and more in the public interest than private enterprise. The commission is now operating some 30 elevators, but the service rates are the same as those of the privately operated elevators.

The grain storage problem has been greatly aggravated since the war because so many of Argentina's customary market outlets have been closed. Under normal conditions, grain moves out of the country rather rapidly following harvest and as a consequence of this situation the grain trade has had but slight experience with the problems of keeping cereals in marketable condition during a protracted storage period. In-

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sect infestation has been particularly troublesome all along the line from farm to terminal elevator. Much of the corn crop has remained on the farms stored in crude "trojas" or corn cribs which are normally used for storage while the corn dries out sufficiently to permit shelling. Trojas are not suitable for long storage periods since the corn soon becomes infested with the Angoumois grain moth and after a short time it becomes practically worthless for either feed or industrial use. A considerable amount of corn has been used for fuel, but usually if it has been stored any length of time it is suitable for no other purpose. The price of corn has been maintained, by governmental purchases, at levels which bring little remuneration to the growers. Fortunately, corn has had value for fuel even when in such poor condition that it would be unmarketable otherwise. During the past year a variety of conditions such as reduced planting, poor harvest, and deterioration of the carry-over has resulted in a temporary solution of the surplus corn problem.

Wheat is used for fuel to a much less extent than corn. Even under present conditions a fairly uniform exportation of wheat has continued to countries such as Brazil and Spain, and there is also some flour exported. The domestic consumption of wheat has remained about the same. Thus wheat has had a greater commercial value than most of the other grains and for this reason it is generally stored under the best available conditions. Considerable wheat, however, especially that stored outside, has gone out of condition during the past two years and this material is being used for fuel. It is difficult to use wheat for industrial fuel because it cannot be readily burned on the usual furnace grate. Corn on the cob or even shelled corn, makes a much more satisfactory fuel for the ordinary wood or coal grates. Wheat is most frequently burned by distributing it over a wood fire.

MORE STORAGE CAPACITY NEEDED

Argentina needs more and better storage facilities. Because of the shortage of structural steel and machinery the grain elevator construction program of the government has been suspended. Even the elevators under construction have not been finished. Since storage space is urgently needed, experiments are being conducted to determine the suitability under local conditions of subterranean silos. Some success is being reported, but the humid climate, deep soil, and poor drainage due to the low, flat contour of the land in the cereal producing areas complicate adherence to the known conditions for safe underground storage. At the present time less than 11% of the total normal storage capacity of the country is suitable for grain in bulk.

The desirability of conserving as much grain as possible for any contingency which may arise is well recognized in Argentina. There has been a steady demand for linseed and this commodity continues to be exported uninterruptedly. It is recognized that changes in conditions may at any time create similar demands for other cereals. But irrespective of what war conditions may continue to do to Argentina's export market, there are several evident tendencies which are almost certain to dominate in the postwar period. In the first place, continuance of the strong nationalistic feeling will undoubtedly cause the government to continue its present policy of buying, building and operating grain elevators. This policy may be continued until there is a complete monopoly of the entire grain trade. Secondly, there will probably be a gradual change from bag to bulk handling of grain and simultaneously more farmers' elevators will be constructed. Thirdly, fixed grades for the various grains will sooner or later become official. And lastly, more thought and care will be given to the proper methods for conserving grain during storage.

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EDITOR'S NOTE.—Since Dr. Shellenberger prepared the foregoing article, the Argentine government has taken over the grain handling and marketing facilities as he predicted. The article was written in March, shortly after he returned from Argentina.

*Rice and Wheat in World Agriculture and Consumption. Wheat Studies of the Food Research Institute. Vol. 17, page 264, 1941.

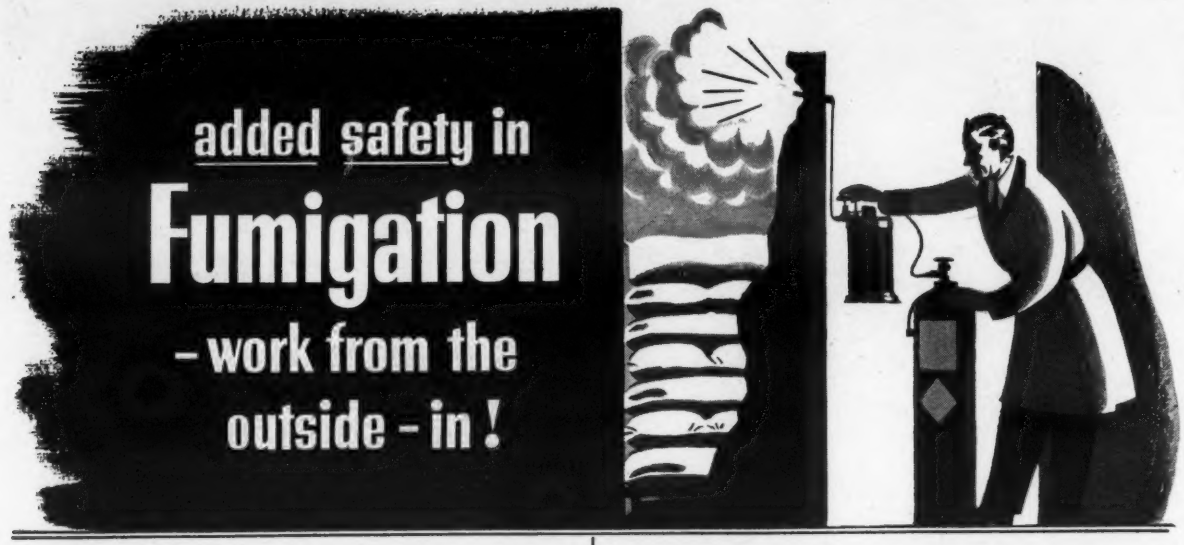
†Comision Nacional de Granos y Elevadores. Publ. 51. La Produccion y el Comercio del Trigo en el ano agricola-comercial. 1941.

‡Comision Nacional de Granos y Elevadores. Publ. 32. Cooperativas Argentinas de Comercializacion de Granos. 1938.

—BREAD IS THE STAFF OF LIFE—

HEADS LONE STAR SECTION

FORT WORTH, TEXAS.—J. D. Cannon, Kimbell Milling Co., Fort Worth, Texas, was elected chairman of the Lone Star Section, American Association of Cereal Chemists, at a recent meeting of the group. Arthur W. Gust, Stanard-Tilton Milling Co., was named vice chairman and C. G. Gustafson, Wallace & Tiernan Co., Inc., will serve as secretary-treasurer.



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Electronics in Grain Conditioning

★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★

By Grover C. Meyer
Industrial Engineer.
Kansas City Power & Light Co.

THE purpose of this paper is to present in a nonmathematical way, an explanation of electronics as applied to one phase of the grain industry.

I have chosen a method of insect control by induction heating for this explanation. Before a clear idea may be had of the working of this method, however, it will be necessary to explain the principle known as the "electron theory" upon which this method is based. This explanation will begin with the constitution of matter which can simply be defined as any tangible substance that has weight and dimensions, and considering further that all matter is composed of molecules, the smallest known physical division of matter. Molecules in turn are made up of atoms, which are the smallest divisions of an element. For example, a molecule of water consists of two atoms of hydrogen and one atom of oxygen.

The "electron theory" now has to do with the structure of the atom, which is pictured by scientists as a small dense core about which one or more electrons revolve in much the same manner as the plants revolve around the sun, the electron being represented by the planets and the core by the sun. The name given to the core or the nucleus of the atom is the proton, and together with its counterpart, or mate, the electron, goes to make up the atom.

The atom is said to be electrically neutral, consisting of equal positive and negative charges of electricity, the proton being the positive charge and the electron, the negative charge. Hence the normal atom is in a neutralized state. Atoms contain protons and electrons in equal numbers and differ only in the number of electrons and protons that they contain.

For example, a hydrogen atom consists of one electron and one proton; a helium atom contains two protons and two electrons; a carbon atom contains six protons and six electrons. As mentioned above, every atom contains an equal number of electrons and protons, but it is possible to remove electrons from an atom or to add electrons to it. A body which contains more than the normal electrons is said to be negatively charged, as the electrons are negative charges of electricity. A body having less than the normal amount of electrons is said to be positively charged. In practice this charging is brought about for example by rubbing a glass rod with a piece of silk. The silk will rub off some of the electrons from the glass leaving the glass positively charged and the silk negatively charged. Although an atom may contain any number of electrons from one, in the case of hydrogen, to 92 in the case of uranium, and although a body contains a larger number of atoms, it is very seldom, if ever, that more than one electron can be removed from each atom. When electrons are removed from a body, the greater the removal, the more difficult it becomes to remove them because of the increasing attraction by the protons as the electrons are removed.

So far we have only shown how an electron can be removed from a body by friction, which phenomena is commonly known as "static." Electrons can be set in a continuous stream by the application of an electrical pressure called "voltage." And a normal stream of electrons constitutes an electric current. To produce currents in the order of magnitude met with in engineering practice requires the flow of billions and billions of electrons per second.

For example, the current flowing in the filament of an ordinary 60 watt lamp is about 10^{19} or 1 followed by 19 zeros, electrons per second. Electricity has a velocity of 186,000 miles per second. This does not mean that the electrons flow at that speed, it merely means that

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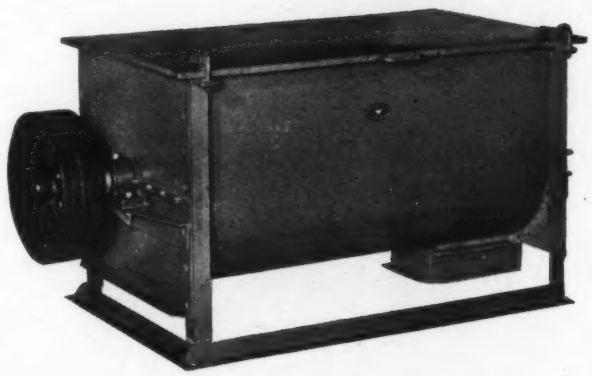

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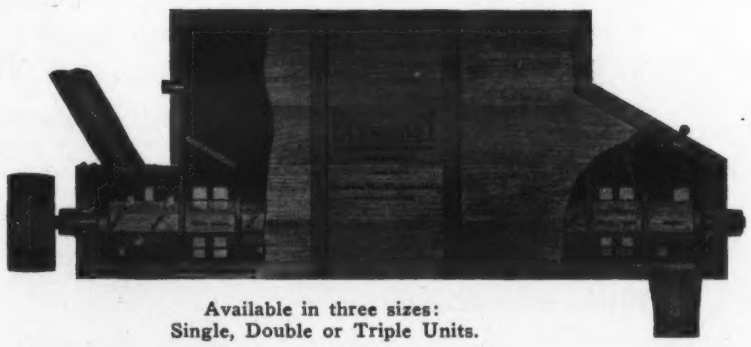

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if an electrical pressure is applied at one end of a copper conductor, which is 186,000 miles long, the electrons will begin to come out at the other end one second later. In other words, the pressure wave and not the electrons travel at the rate of 186,000 miles per second.

The electrons are already in the atoms of copper of which the conductor is composed and require some external force for their movement. Electrons can only be moved through a conductor by the aid of an electrical pressure. At this point, it might be well to give a mechanical analogy of what is meant by "pressure wave."

There are none of us but what at some time have observed the starting of a train of freight cars by a locomotive. In starting the train of cars, it is necessary that the slack must be taken up at each car coupling, and while the locomotive might be moving forward at the rate of only one mile per hour, the travel of the pull or take up will travel much faster than one mile per hour. The pull of the locomotive represents the pressure wave and the cars of the train represent the electrons.

Normally, with the transmission of an electric current, we deal with conductors and insulators, and as both of these items constitute matter, the atoms of which they are composed contain electrons and protons. An insulator is a material that offers a very high resistance to the passage of an electric current, or the movement of its electrons. A conductor is a material that offers a comparatively low resistance to the passage of an electric current, or the moving of its electrons.

A perfect insulator would offer an infinite resistance to the passage of an electric current. No perfect insulator is known in engineering practice. The best insulators such as air, glass, mica, porcelain, rubber, oil and varnish have an electrical resistance at room temperature, millions of times that of copper or aluminum. There is no sharp distinction between insulators and conductors. If the electric pressure is raised high enough, the so-called insulator becomes a conductor.

Summing up what has been said regarding insulators and conductors, they differ only in the pressures required to move the electrons. All materials remain insulators as long as the pressure is insufficient to cause their electrons to leave the atom, even though the orbits in which they revolve about the protons might be distorted.

This now leads to the explanation of how the electrons affect the insects, which infest the grain. Going back for the moment to the constitution of matter and the definition that matter is any tangible substance that has weight and dimensions, the grain and the insects both fall into this category, and the atoms of which the insects and the grain are composed, likewise contain electrons and protons, but are on the insulator side as far as the transmissions of electrical currents is concerned.

The idea now is to make the infested grain a part of an electric circuit with an electrical pressure applied to this circuit of sufficient value to cause a strain in the electrons within the grain and insects, but not high enough to cause them to leave their respective atoms. By alternately applying and removing this electrical pressure the electrons will be set in motion back and forth from their normal to their strained position, and as energy is expended in this motion, it causes the grain and insects to heat. This motion is brought about in a practical way by the application of an alternating voltage similar to that used in your home for lighting purposes, which is referred to as 60-cycle alternating current.

It has been found by experiment that the 60-cycle frequency is too low to create sufficient losses within the grain to reach the desired temperature. And so by the use of electronic tubes, high frequency oscillators have been built to produce frequencies of millions of alternations per second.

The Utilities Research Commission of Chicago has carried on experiments along these lines, and quoting from articles which they have published, it was found that a period of 50 seconds was required to raise the temperature of 6½ cubic inches of grain to 130° F. and at this temperature all four life stages of the insects were destroyed. Quoting further from the publications of the Utilities Research Commission various temperatures and time intervals were tried but it appeared that 50 seconds were required to bring the grain up to 130° F. with an ambient temperature of 80° F.

While the application of induction heating to the control of insects in grain is still in the laboratory, the method has been successfully used in other industries such as the bonding of plywood, plastics, etc.

You will appreciate that this paper is not complete in theory, but if it has conveyed to those of the grain industry some understanding of the theory behind the method, it will have served a purpose.

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Calcium in Bread

★

TWO Cambridge research scientists, Dr. R. A. McCance and Dr. E N. Widdowson, who persuaded the British government to fortify Britain's bread with calcium, told a Dublin audience, in the College of Physicians, of the experiments which had demonstrated the importance of this change. Among those present, according to the Irish Times, were Mr. de Valera; Dr. Ryan, Minister for Agriculture; Dr. Ward, Parliamentary Secretary to the Minister for Local Government; members of the Dietetic Council, which had arranged the meeting; several leading medical specialists, many medical practitioners and representatives of the millers.

Asked if in Ireland bread should be fortified with calcium, Dr. McCance said the question really answered itself. They should ask first of all if there was a deficiency of calcium in the population, and, if so, was it alarming enough to take action about it? They should ask if people could obtain plenty of milk (a rich source of calcium) and if they could afford to pay for it. If they carried out a dietary survey they would have the answer in a month. If they wanted to improve the diet of the poor the substance to which calcium should be added was bread, because the poor ate more bread than anything else. In England the move to add calcium to bread had been violently opposed, some talking about the hardening effect of extra calcium on the arteries. Yet nothing had been heard of all this when the prewar "drink more milk" campaign was greatly adding to the amount of calcium absorbed.

In his view we could not sit back and regard the health of the population as a matter of chance. National health owed more to the control of epidemic disease and improvements in nutrition than to anything else. In consequence, medical men had responsibilities they never had before. If after appraisal of the facts they felt that they could improve the health of the people, and if they failed to do it, then they would get little respect from posterity.

CALCIUM EXPERIMENTS

Giving an account of experiments on the absorption of calcium, Dr. McCance said that he and Dr. Widdowson, with a group of helpers, put themselves on diets of white bread for a period of several weeks, and then on brown bread (92% extraction). They found that the quantity of calcium absorbed was much smaller in the case of brown bread than in white, and they showed that the presence of phytic acid in the brown bread was the chief determining factor. The deficiency of calcium could be remedied by adding extra calcium, but a considerable amount needed to be added—in their view, 14 oz of calcium to a 280-lb sack of flour. The Ministry of Food, however, decided to add only about half that quantity.

Dr. Widdowson gave an account of how the calcium experiments had been carried out, and also a series of experiments on the amount of iron absorption from bread. This showed that iron absorption from brown bread was lower. This would explain the increased incidence of anaemia reported in England, though she did not think that the evidence of this increase was conclusive.

F. P. Hallinan, president of the Irish Flour Millers Association, said that the preference of miners and agricultural workers for white bread showed its superiority as an energy food.

Dr. E. Sheridan said that the addition of extra calcium might improve bone structure, but would not necessarily improve teeth, and that they would have to wait for a few years to see what the effect of the brown bread had been on teeth.

Dr. Robert Collis said that a survey had revealed an increase of about 10% in the incidence of anaemia in certain groups in Dublin, and of about 250% in the incidence of rickets. The supply of milk in Dublin was poor, and the water supply was poor in calcium.

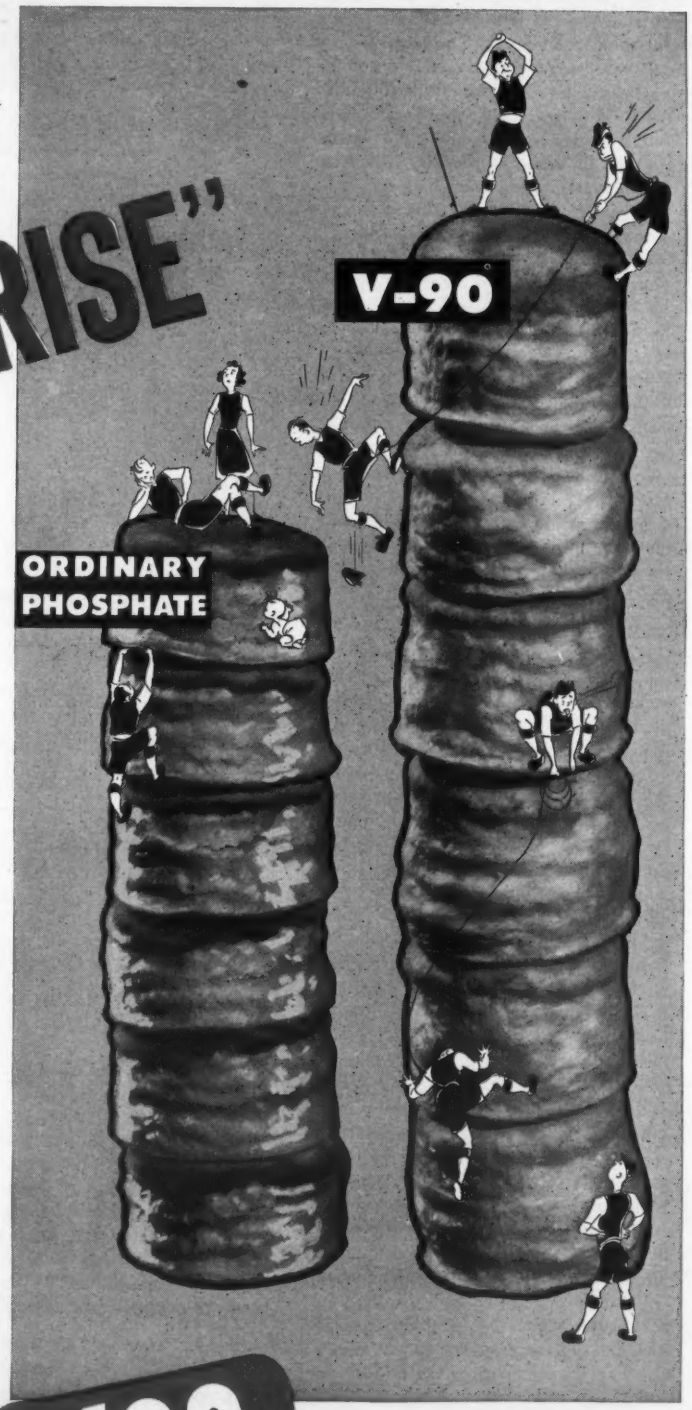
Professor Jessup, who presided, said that the increase in rickets had reached its maximum in children aged two.—*The Miller.*

——BREAD IS THE STAFF OF LIFE——

Flour Enrichment

In the April number of the Canadian Baker, Dr. L. B. Pett compares the American system of flour enrichment which calls for the addition of certain synthetic vitamins and minerals and the Canadian system which simply seeks to produce a type of wheat flour sufficiently high in thiamine to enable the carbohydrates of the same flour to become fully utilized. He points out that ordinary white flour does not contain enough thiamine to utilize its carbohydrates fully. He points out that if synthetic vitamins should be considered necessary in Canada, these should be added to Canada Approved White Flour rather than to the nutritionally inefficient ordinary white flour.—*L. H. Newman.*

Compare BISCUIT "RISE"



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Even under varying home baking conditions, however, equally striking results have been obtained. Tests made with every possible type and grade of flour reveal that even under adverse conditions, self-rising flour made with V-90 consistently outbakes ordinary self-rising flour . . . showing characteristic improvement in volume, lightness, tenderness, crumb color and palatability.

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Chemistry for the Operative Miller

By Dr. C. O. Swansan
Kansas State College

Substances in Nitrogen-Free Extract

"NITROGEN-FREE extract" is a term that commonly appears on tags that show the analysis of mixed feeds. Included in the statement of analysis are the amounts of protein, fat and crude fiber. The moisture and ash percentage are also included in the analysis guarantee for feeds in which moisture and ash are important factors.

The amount of nitrogen-free extract present in grain or feed is determined by calculation and not by analysis. After the routine analyses for ash, protein, carbohydrate, etc., are completed, the chemist adds the percentage figures for those constituents and subtracts that total from 100. The difference is said to be the amount of nitrogen-free extract present.

Originally the term was meant to designate those constituents in a food or feed which did not contain any nitrogen and hence were protein-free. Since ash, crude fiber and ether extract also are nitrogen-free, the term does not conform to the original idea. A more meaningful as well as less cumbersome term would be desirable, but that is another matter.

HETEROGENEITY OF FEED CONSTITUENTS

Nitrogen-free extract is the most heterogeneous of the various constituents included in a usual analysis required by feed laws. However, even the other five are not simple substances as can be seen in the following. Moisture is the simplest. It includes whatever may be vaporized when a feed sample is heated at the boiling point of water until no further loss of weight occurs. Any substance which would be vaporized under these conditions would be included in the moisture percentage but the amounts of such substances in feeds are negligible. Ash includes all material that is not destroyed or removed by heating at 550° C. (1,022° F.). This definite temperature is specified among other conditions, because there are some mineral elements or compounds which are volatilized at higher temperatures. Ash is meant to include as nearly as possible all mineral elements and their compounds.

The amount of protein is calculated by multiplying the percentage of nitrogen by a factor, 5.7 for wheat and flour and 6.25 for feeds. This means that all substances which contain nitrogen are included in the percentage of protein. Because of the inclusion of nitrogenous substances which do not meet the definition of true proteins, the term crude protein is often used. By far the larger part of nitrogenous substances in most feeds qualify as true proteins.

Since fat or ether extract includes all material that is soluble in ethyl ether, its percentage includes some substances which are not fat. This is especially true of roughages. Ether extract from concentrates is more nearly true fat or oil. For these reasons the term crude fat is often used. Crude fiber is classed as the least valuable constituent in feeds and hence the guaranteed analysis specifies "not over or more than." Its coarse nature is indicated by the insolubility by successive boilings in 1¼% sulfuric acid and 1¼% sodium hydroxide (caustic soda).

NITROGEN-FREE EXTRACT

The foregoing discussion shows the more or less heterogeneous nature of the five constituents in feeds which are determined directly by laboratory methods. Nitrogen-free extract is much more heterogeneous in composition than any of the others. First of all it is made to include whatever is not determined directly by the methods used for the other five constituents. Secondly, what is obtained by this difference includes a number of well-known compounds, some that are little known and some which are designated as unknown or undetermined.

SUBSTANCES IN NITROGEN-FREE EXTRACT

Charles H. Briggs, formerly of the Howard Testing Laboratories, mentions about 120 elements and compounds which may be present in wheat or flour. Nearly one third of these occur in nitrogen-free extract.

In Table 1 is shown the composition of wheat, flour, bran and germ as reported by Osborn and Mendel. Four substances are named, sucrose (sugar), dextrin, starch and pentosans, which are included in nitrogen-free extract. Be-

Table 1. Composition of Wheat, Flour, Bran and Germ.
(Moisture free basis)

Substance	Whole Wheat %	Flour %	Bran %	Germ %
Crude protein..	11.25 (Nx5.7)	10.20 (Nx5.7)	17.60 (Nx6.25)	40.25 (Nx6.25)
Fiber	1.75	0.34	11.18	1.71
Fat	2.18	1.15	8.26	13.51
Ash	2.03	0.43	8.61	4.82
Nitrogen free extract—				
Sucrose	0.61	0.24	1.92	..
Dextrin	2.01	3.63	5.03	24.34
Starch.	63.80	77.52	0.00	0.00
Pentosans, etc...	6.27	1.80	32.77	?
Undetermined	10.10	3.72	14.63	15.37

sides these the percentage for "undetermined" is also included in nitrogen-free extract because of calculation by difference. This "undetermined" ranks in magnitude with starch and protein. It is unfortunate that so little is known about the composition or constituents in this "undetermined" classification.

THE CARBOHYDRATES

The substances shown in Table 1 as the principal constituents of nitrogen-free extract belong to a class of organic compounds known as carbohydrates. The most common and best known carbohydrates are the sugars, the starches and the celluloses. The celluloses are the main substances in crude fiber. All carbohydrates are composed of the three elements, carbon, hydrogen and oxygen. Hydrogen and oxygen in carbohydrates occur in the same proportion as in water, H_2O, hence the name carbohydrate, "carbo" from carbon and "hydrate" from the Greek word hydro, meaning water. Carbohydrates are distinct from another large group of compounds, the hydrocarbons which contain only carbon and hydrogen. The carbohydrates are the main sources of energy in animal foods and rank in importance with the proteins and the fats. The hydrocarbons are the main constituents in coal and petroleum products and are therefore the main source of mechanical energy. When carbohydrates burn, they do not deliver as much energy per unit as the hydrocarbons, because oxygen in the former is already chemically combined. Hydrocarbons, on the other hand, have no energy value in foods or feeds.

STRUCTURE OF CARBOHYDRATES

It should not be inferred that the water molecule, H_2O, is directly combined with the carbon in carbohydrates. Such an inference might be made from the fact that when a small amount of sugar is carefully heated in a glass test tube, drops of water may be seen to condense on the sides of the tube. That these liquid drops are really water can be shown by the blue color produced when small fragments of anhydrous copper sulfate are wetted by these drops. Only water will produce this color in anhydrous copper sulfate. Water, H_2O, contains the two ions H+ and OH— and in carbohydrates these are each combined directly with the carbon atoms. In heating sugar, these two ions are first liberated and then they combine to form water. The carbon remains as a charred black material.

FORMATION OF CARBOHYDRATES IN PLANTS

Carbohydrates are the first compounds formed in plants by the energy of sunlight through the agency of the green chlorophyll. The two materials for building carbohydrates are water, H_2O, and carbon dioxide, CO_2, in the air. The simplest combination may be represented by the equation: $H_2O+CO_2=CH_2O+O_2$. Oxygen is thus a by-product in photosynthesis. Conversely when carbohydrates are completely decomposed (which means that the above equation is reversed from right to left) the resulting products are water and carbon dioxide. The molecules of the comparatively simple substance CH_2O, known as formaldehyde, combine first to form the simpler carbohydrates and then these form the more complex. A combination of six molecules of CH_2O forms dextrose or glucose, $C_6H_{12}O_6$, and levulose or fructose which also has the formula $C_6H_{12}O_6$. A combination of one molecule of glucose and one fructose, with the elimination of one molecule of water forms sucrose or sugar, $C_{12}H_{22}O_{11}$. From these more simple compounds are built up the much more complicated molecules of starches and celluloses whose general formula is $(C_6H_{10}O_5)n$. This indicates that for each one of the simpler units $C_6H_{12}O_6$ used in building such molecules, one molecule of water is eliminated. In this way the energy of sunlight is stored in the carbohydrates which are the main sources of energy for animals.

CLASSIFICATION OF CARBOHYDRATES

Carbohydrates are commonly placed in groups known as monosaccharides, disaccharides, and polysaccharides. Another group, trisaccharides, is often named. Glucose (dextrose) and fructose (levulose) are monosaccharides indicating one unit, $C_6H_{12}O_6$, in the molecule. They are also known as hexoses. The disaccharides, sugar, $C_{12}H_{22}O_{11}$ and maltose, $C_{12}H_{22}O_{11}.H_2O$, have each two such units. The polysaccharides, as the name indicates, have many such units and their molecules are consequently rather complicated.

Another group of carbohydrates mentioned in Table 1 are known as pentoses or pentosans and have the formula $(C_5H_{10}O_5)x$. Portions of these are included with crude fiber as was indicated in a previous article.

THE SUGARS

The most common as well as most important disaccharide is cane or beet sugar. Maple sugar also belongs to this class. When sugar ($C_{12}H_{22}O_{11}$) is acted on by dilute acids it is hydrolysed into equal quantities of the monosaccharides glucose (dextrose) and fructose (levulose). The enzyme sucrose (invertase) will also cause this change. Cane sugar is obtained from the juice of the sugar cane whose stems contain from 11 to 16% sugar.

Maltose ($C_{12}H_{22}O_{11}.H_2O$) is formed by the action of the enzyme diastase upon starch. Maltose is of particular interest to millers because of its association with diastatic activity of flour. A small amount of maltose is naturally present in wheat. The amount may be greatly increased by the conditions which induce the process of germination. Lactose or milk sugar is a disaccharide and unlike the others is of animal origin. It is obtained from the evaporation of whey from milk.

THE POLYSACCHARIDES

Starch and cellulose are the two important polysaccharides. The general formula, $(C_6H_{10}O_5)n$, shows the relationship to the other carbohydrates. By combining a large number of the glucose units, $C_6H_{12}O_6$, and removing a molecule of water, H_2O, for each unit combined, the complex compounds $(C_6H_{10}O_5)n$ are obtained. The numerical value of n is not exactly known and estimates range widely. Obviously it is not the same in cellulose as in starch. Starch is concentrated in seeds, cellulose in the coarser parts of the plants, leaves and stems. Cereal grains are main sources of starch, together with certain roots and tubers such as potato and arrowroot. Starch occurs mostly in the parts of plants

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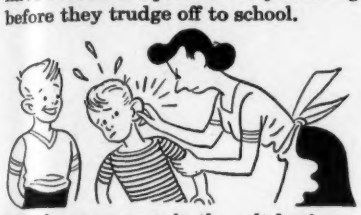

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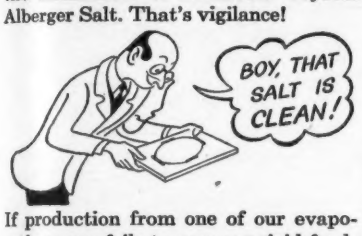

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used for starting and nourishing another plant in initial stages of growth. Cellulose occurs mostly in the protecting and supporting parts. Cotton is an exception to this last statement.

TRANSFORMATIONS IN CARBOHYDRATES

The action of the enzyme diastase on starch produces maltose and complete hydrolysis, glucose. Controlled action of acids also produces these sugars as well as intermediate compounds generally classed as dextrins. The main source of commercial glucose is starch. The carbohydrate nature of hard woody cellulose indicates that it may also be acted on by acids and produce simpler carbohydrates which have a value in feeds. This is actually done in some countries where sources of feeds are more restricted than in our own country.

SUMMARY

This discussion shows that nitrogen-free extract is the most heterogeneous constituent reported in feed analysis. The main substances contained in nitrogen-free extract are the carbohydrates. Since cellulose is the main constituent of crude fiber, all carbohydrates are obviously not included in the nitrogen-free extract. The most abundant carbohydrate in nitrogen-free extract is starch. Other carbohydrates are sugars, dextrins and some of the pentosans. Since carbohydrates are the main constituents in nitrogen-free extract, and since carbohydrates are the main sources of energy in most animal feeds, nitrogen-free extract is the most important energy constituent reported in feed analysis. Since crude fiber is mostly carbohydrate, the sum of nitrogen-free extract and crude fiber may be designated as carbohydrates as is frequently done.

—BREAD IS THE STAFF OF LIFE—

Old Grist Mill in Catskill Mountains Is Being Renovated

AN old grist mill, which has been in operation since 1707, will soon be in production as renovations near completion. The mill, built on the west shore of the Hudson River at Catskill, N. Y., by Samuel Van Vechten in 1707, was given a patent right and a site by Governor Dongan in 1686, when Teunis Dirksen Van Vechten, a brother of Samuel Van Vechten, applied for it. He and Samuel dammed the river at that point.

The new owner is Horace C. Barber, of New York City, who purchased the mill last fall from the Albany Buckwheat Products Corp. and renamed it the Rip Van Winkle Grist Mill. Warren M. Trimble will be production manager. He has managed large mills producing stone ground flour in this country. Alfons Harlacher, New York, who learned the milling trade in Europe, will be miller in charge. The mill will employ 15 persons.

The water-powered millstones are now grinding two kinds of whole wheat flour for bread, and later rye meal, rye flour, graham and buckwheat flour, corn meal, buckwheat and wheaten pancake mixes will be produced. At capacity operation the mill will turn out 400 sacks of flour a day, its operators claim.

Bread and other products made from flour ground at the mill will bear the company's trade name.

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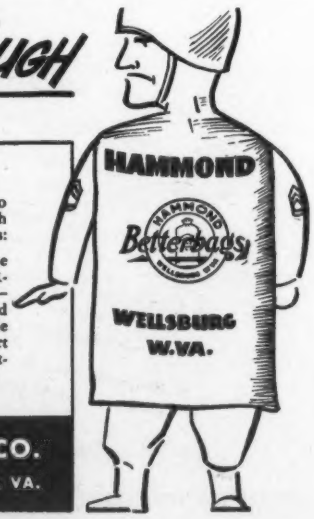

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Buhrstone Miller's Trade Badges Were on His Hands

"WELL-WORN" millers in the days of buhrstone mills were supposed to exhibit two marked characteristics in their hands—bits of steel embedded in the skin of their left hand and a broad, flat thumb on the right; the first is an established fact, the second largely legendary.

Millbills, the tools used to dress stones, must be very hard to cut French burrs; small particles fly from them from time to time and some of these pieces embedded themselves in the back of the stonedresser's left hand, especially so with tender skins; some millers' hands were quite blackened. When every village possessed a wind or water mill, there was always a number of men who tramped the country seeking for the job of stone dressing; some from force of circumstances, some from force of habit, some genuinely wanting work, some merely cadgers. If a miller needed help, the man who could "show his steel" was the more likely to be allowed to "show his metal" than he who could not.

A story has been told of two men applying for work stone dressing who, when asked to "show their steel," held up the palms for inspection, only to be told by the miller exactly what he thought of them.

Windmillers who had work to offer were in the habit of advertising the fact with their sweeps, setting the bottom one just in advance of the vertical; any strolling stone dresser, noting a mill in that position, knew that a job of work was available. The broad flat thumb is supposed to result from constantly feeling the meal to test the fineness of grinding.

The Miller's Thumb, a small, flat-headed fish found in every English stream, takes its name from this circumstance. No doubt the supposed peculiarity of the miller's thumb was at one time more widely known than it is today. In Mrs. Ewing's *Jan of the Windmill* it is made the subject of an amusing episode, the miller's adopted son being accused by his fellow scholars of deficiency in this respect. Meanwhile, Jan attempts to develop a "miller's thumb" by sifting flour through his fingers when opportunity offers.

Where two men were employed, it was the privilege of the senior to dress the runner, upon which he sat sideways, his body inclined forward, elbows resting on a small cushion of bran, the "bist," the extremity of the thrift, or handle for holding the bill, grasped in his right hand, his left near its head. Meanwhile, his less fortunate colleague laid either upon his left side or knelt, if the bed stone was adjacent to either stones or machinery.

When the miller found his bills unduly thick or getting soft, he sent them to the local forge. After the bills had been heated and hammered to the correct thickness, the hardening operation was always done after dark. The smith used a charcoal fire and he had no modern pyrometer or other refinement to judge the heat; it was judged solely by color. The dark cherry red heat necessary for hardening could be easily exceeded in daylight; the bills were heated about 1½ to 2 inches back, first quenched in pickle, finally cooled in water.

Most smiths had their own pet pickle, and some of the mixtures were fearful and wonderful. Often hoof parings formed part of the concoction, certainly increasing the odor, if nothing else. It was a popular belief that contact with horse hoofs gave quality to the steel.

Thin, newly forged millbills were kept for cracking and facing; when too thick for this purpose, they were suitable for furrowing.—*John Russell, in Milling.*

—BREAD IS THE STAFF OF LIFE—

FISHING—FOR SCRAP

Hand in hand with the milling industry, fishing has gone to war—and with a double emphasis.

The fishing industry, besides reaping daily treasures from the ocean to supplement war-lend-lease-depleted meat stores, has embarked on a novel scrap hunt that will cover industry installations from wharf to processing plants.

In complete accord with the scrap program of the WPB, a total of 180 fishery trade associations and unions throughout the nation have pledged that all their iron and steel scrap will be directed back to war production. According to salvage officials, the campaign in the fisheries is expected to net several examples of dormant iron and steel scrap: old hull plates and other structural steel from repaired, wrecked and dismantled hulls, old chains, anchor parts, broken cables, fittings, cylinder heads, pistons and other motor parts.

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Nutrition *Technology*

Research Reports by Cereal Chemists

★ ★ ★ ★ ★ ★ ★ ★ ★

FOLLOWING are abstracts of many of the technical reports presented at the thirtieth annual convention of the American Association of Cereal Chemists in Minneapolis, May 23-26.

A rough classification of the more common protein sources in foods was supplied by Dr. R. J. Block of the department of physiology and biochemistry, New York Medical College; and Diana Bolling, C. M. Armstrong, Inc., New York. The classification offered by Dr. Block was based upon the essential amino acid content of the different foods and indicated that there is no single "perfect food" from the standpoint of supplying sufficient amounts of all essential amino acids.

The analytical results, Dr. Block said, permitted the following classification:

Well-balanced foods: eggs, meat, fish, sea foods, glandular organs, milk, yeasts, soybeans, wheat germ, corn germ, leafy vegetables, grasses.

Somewhat low in one or two essential amino acids: cheese, oats, peanuts, cottonseed, linseed, whole hard wheat, rice.

Decidedly deficient in one or two amino acids: whole corn, white flour, corn grits.

Deficient or lacking in more than two amino acids: gelatin, elastin, keratin.

"Even this rough classification may be quite misleading," Dr. Block said, "for certain proteins of plant origin are decidedly superior to some of animal origin. If the degree of digestibility and the essential amino acid composition of protein foods are known even approximately, it should be possible to replace an expensive or scarce food by an available one of equal nutritive value. Furthermore, the total protein of the diet can often be drastically reduced without loss of nutritive value by ascertaining that the amino acids are supplied in a balanced mixture where each is utilized to maximum efficiency rather than furnishing a considerable excess of total protein and trusting to chance and practical experience that the minimum amino acid requirements are being met."

Analyses of whole corn, soft wheat, corn gluten, white flour and the cereal germs showed that both cereals are markedly deficient in lysine, one of the indispensable amino acids, while corn proteins are also deficient in tryptophane and patent flour may be low in valine, both of which are also indispensable amino acids.

The data on soybean proteins, Dr. Block said, indicate that they are excellent potential sources of all the essential amino acids except cystine and methionine, especially the latter.

"Food products made with patent flour contribute their share of protein, isoleucine, cystine plus methionine, histidine, leucine, phenylalanine and arginine," Dr. Block said. "If corn gluten or milk solids are added, the relative deficiencies of threonine, valine and tryptophane are almost completely eliminated," he added.

"The results of these analyses show that if 2¼ to 2½ grams of lysine or a third of a pound of fresh meat were added to 2½ lbs of bread or 3,000 calories of other wheat product containing 4% milk solids, corn gluten or equivalent protein, a stable food, balanced both with respect to calories and protein (essential amino acids) would be achieved. The value of such supplementation in the rehabilitation of the conquered countries may be great, for a recent report from France states that a great many cases of war edema have been observed since 1940 and the principal cause is not the lack of total protein but rather the deficiency of that amino acid furnished in greatest quantity by animal proteins, that is, lysine," Dr. Block concluded.

Dr. H. J. Almquist, University of California, presented a report on effective use of proteins in the nutrition of the chick as one of the features of the symposium on protein nutrition. He said that his studies indicated a higher nutritional value for alfalfa than formerly suspected and emphasized the desirability of giving fresh and dry green

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feed to chickens in these days of protein shortages.

Soybean meal, he said, is an acceptable source of protein for chickens, except for its deficiency of cystine and methionine, essential amino acids. Corn, wheat and barley proteins, he said, show typical differences. He went on to say that wheat proteins generally are better balanced, from the standpoint of the amino acid content, than are corn proteins. A combination of two parts soybean meal to one part sesame meal constitutes an adequate source of protein for the chick, he pointed out, since the meals supplement each other and in that ratio supply all of the essential amino acids.

The primary consideration from the standpoint of the performance of the fowl, Dr. Almquist said, is to avoid serious amino acid deficiencies. A secondary consideration in making up chick feeds is to avoid wasteful surpluses of one or more of the amino acids, since such surpluses are quickly destroyed. If proteins are chosen so as to create an average amino acid supply as closely as possible to the requirements, the greatest efficiency in growth and in protein and feed utilization will be attained, Dr. Almquist stated.

PROPERTIES OF SOY FLOUR

Some of the functional properties of soy flour in yeast-raised products were reported on by R. T. Bohn and H. H. Favor, General Baking Co., New York. Dr. Bohn, who presented the report, said that most commercial grades of edible soy flour on the market today contain less than 50 rope spores per gram and are now satisfactory for use in bread production. The full-fat soy flour, he said, contains about 40 times the amount of carotenoid pigment that white flour contains, but that about two thirds of the undesirable color could be removed by bleaching. The characteristic flavor of the full fat flour is not affected by such bleaching, he added. Bleaching of the full fat flour improves its baking qualities slightly, he said.

Dr. Bohn indicated that 3% soy flour in the dough mix was about the optimum amount if absorption, loaf volume, and crumb color were not to be adversely affected. He said that the inclusion of 3% full fat flour did not bring about any appreciable change in mixing time, but that with higher percentages of flour in the mix, the mixing time was reduced somewhat.

The absorption of full fat soy flour in bread doughs was found to be only slightly higher than for wheat flour alone, Dr. Bohn reported. He also said that soy flours vary considerably in color depending upon the process employed to debitter the bean before it is reduced to flour. Loaf volume reduction, when soy flour is included, is proportional to the amount of soy flour in the mix.

BAKING CHEMISTRY SESSION

The job of correlating laboratory and commercial baking results was discussed in a paper presented by D. B. Pratt, Jr., B. A. Eckhart Milling Co., Chicago, for the committee on relation of laboratory baking to shop practice. Samples of bakery flours were submitted to members of the committee with requests that they bake them according to their own methods and submit reports. There was considerable agreement in ranking the various flours, but rather wide variations in recommendations for handling the flours in the shop. Once a correlation is established between baker and chemist, the report said, it should not be difficult to develop material that would fill a long existent gap between the experimental and practical viewpoint. The chemist cannot complete his end of the job alone, the committee pointed out, for he needs the help and information that the baker can give him, and the committee suggested that consideration be given to the development of a co-operative program by the cereal chemists with bakery engineers.

A second paper presented by Mr. Pratt dealt with lecithin in bread. He concluded that the value of lecithin in bread was demonstrated satisfactorily in the experiments, saying that although certain of the benefits are not measurable they do exist none the less to the experienced baker.

Presence of lecithin was most notable in improved handling properties of the doughs at makeup. The doughs were more elastic and lively and had a distinctly drier feel. Dusting flour requirements where lecithin was contained in the dough were less than in the control doughs and the skin formed in the molding operation showed less signs of tenderness. In the finished product the presence of lecithin had little or no effect on volume, and the improvements were a more tender crust, finer grain and texture and more symmetrical appearance. There was no effect on crumb color other than illusion of whiteness brought about by finer cell structure, Mr. Pratt declared, and there appeared to be no effect on fermentation but some tendency to increase absorption.

In a study of sponge fermentation by altering the composition of the at-

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mosphere in which the sponges are allowed to ferment, Harry C. Johnson, Montana Flour Mills Co., Cleveland, Ohio, reported that the rate of expansion and the height of the sponge was not affected by greater concentrations of carbon dioxide, oxygen or nitrogen. Fermenting a sponge under pressure of 5 lbs per square inch resulted in a slower rise and less height. The only atmosphere that produced more desirable results than air was where carbon dioxide had a level of 15.5% to 25% and the oxygen 14% to 15.5%. This was for a three-hour sponge which showed indications of underage in the control dough fermented in air. In using a closed glass jar to hold the carbon dioxide produced from the fermenting sponge, the highest quality bread was produced when using a three-hour sponge, Mr. Johnson's results showed.

Floyd Schoonover, Jacob Freilich and Sutton Redfern of the Fleischmann Laboratories, New York, reported on some results of a comparison of sponge fermentation in cabinets as against fermentation in open troughs in a controlled dough room at 80° and in an uncontrolled room at lower temperatures. Observations indicated that the cabinet fermentation was of considerable help in achieving better results in an uncontrolled dough room but that differences were not significant in comparison with the controlled dough room.

A comparison of results of protein determination by the Zeleny and Kjeldahl methods in relation to loaf volume of bread produced from a number of western Canadian wheats was reported by W. J. Eva and J. A. Anderson, of the Board of Grain Commissioners for Canada, Winnipeg.

It is highly improbable that any action which bromate may have on the pentosans of flour is a factor of major importance in its flour improving effects, C. W. Ofelt, of the University of Minnesota, reported in a paper presented by himself and Dr. W. F. Geddes of the university. The greatest response to bromates was when only gluten and starch were present, and the work suggested that the power of response to bromates resides in the gluten of the flour.

In a comparison of eight hard spring wheat varieties grown at seven North Dakota experiment stations in 1943, R. H. Harris, L. D. Sibbitt and G. M. Scott, of the North Dakota Agricultural Experiment Station, Fargo, showed that environment during growth had a very marked effect on all flour properties studied. The variation between stations was greater than between varieties and there was evidence of marked differences in protein quality.

A report was presented by Emery C. Swanson and E. G. Bayfield, of Kansas State College, on the effect of mixing speed and dry milk solids on bread. The work conducted on thousands of bakings indicated that the type of mixer and the quality of flour had an important influence on the best mixing speeds for dough and the best dry milk solids content for bread. Flour from some wheat varieties showed a markedly different response than others. The data indicated that for every mixer there should be a mixing speed beyond which no appreciable change occurs in mixing time regardless of the percentage of dry milk solids used.

The report of the committee on testing biscuit and cracker flours, made by Frank Schwain, Kroger Grocery & Baking Co., Cincinnati, indicated that the customary laboratory baking tests on cooky flours came closer to bakery shop results when these flours were used for sheeter and wire cut cookies than for rotary cut cookies, possibly due to differences in moisture. The tests were made on three Pacific Coast flours of varying granulations.

In a discussion of the distribution of water in bread dough, J. C. Baker, H. K. Parker and M. D. Mize, Wallace and Tiernan Co., Inc., Newark, reported that starch imbibes about 30% of water when held in the vapor above dough liquor at 85° F. while gluten imbibes 39% of water under the same conditions. This amount of water in gluten gives it soft, plastic and cohesive properties such as are needed to form a dough. Calculations from these observations show that in 100 g of dough containing 57.2 g of flour, 41.7 g of added water and 1.14 g of salt, the starch holds 11.2 g of water and the gluten holds 2.7 g of water. These results indicate that most of the water in dough is held in the gluten capillaries as a viscous solution of solubles and this viscous elastic mass is distributed around the dispersed wet starch occupying approximately equal space.

FERMENTATION FACTORS

The rate of alcoholic fermentation in bread dough has heretofore not been equally in solutions of known composition. Lawrence Atkin, Alfred S. Schultz and Charles N. Frey, of the Fleischmann Laboratories, New York, prepared a solution containing potassium, magnesium, phosphate and sulphate ions, thiamine, pyridoxine, niacin, a source of yeast-available nitrogen, sugar

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and a sodium citrate buffer that supported a rate of fermentation equal to that in a flour suspension fortified with an excess of sugar and nitrogen. The report described the specific effect of each of the factors mentioned above and it is planned to make a further study of the influence of the individual factors.

Phosphate, sulphate, magnesium and potassium were found to be without effect separately and only in the complete mixture is their importance apparent. When thiamine was omitted, fermentation proceeded at a low level and showed a relatively slight acceleration. Pyridoxine omission caused only a slight recession from the best rates of fermentation. Although niacin forms a part of the complete mixture the effect of its omission, if any, was so slight as to be beyond measurement of the procedure used. When no nitrogen was present the rate of fermentation attained only a low level and no acceleration is evident.

The scientists were subjected to considerable criticism regarding the manner in which they have been preparing oral and written technical reports. A general session, arranged by Dr. W. F. Geddes, editor of the organization's technical journal, was devoted solely to the general subject of manuscript writing, preparation of illustrations, etc.

Dr. J. A. Anderson of the Grain Research Laboratory, Winnipeg, presented two reports on the symposium. One dealt with the preparation of tables, charts and diagrams and the second report consisted of a discussion of the use of statistics in the presentation or writing of technical reports. Others on the symposium included H. L. Harris, and T. Swann Harding, U.S.D.A.

Post War Manpower

(Continued from page 3a.)

Among the many problems that would have to be worked out in the establishment of a vocational short course school for millers are the following:

1. Management, if the project were co-operative between one or more organizations.
2. Disposition of the manufactured products.
3. Placement of the persons who completed the short course satisfactorily.
4. Arrangement with companies who wish to conduct research, using the mill's facilities.
5. Salary payment to the instructional staff.
6. Arrangement or agreement with the organized labor unions regarding placement of the workers.
7. Facilities for affording non-veterans the opportunity to avail themselves of the training course.

WOULD PERMIT RESEARCH

Another distinct advantage to be gained from leasing a mill of commercial size is that it would make possible the institution of a comprehensive research program, such as advocated by Dr. E. G. Bayfield, head of the Department of Milling Industry at Kansas State College.

Members of the postwar planning committee of the Millers National Federation recently were presented with an outline for the establishment of a research foundation for the milling industry and several of the proposed lines of research were operative milling problems. Other topics included research in cereal chemistry.

Arrangements probably could be made to permit mill machinery manufacturers and other firms serving the milling industry to conduct tests of their machines and products in the mill, with the provision that the results of such research were to become the property of the all-industry agency or agencies conducting the school. The Association of Operative Millers consistently has encouraged research in flour milling, but has lacked the necessary finances to establish a research institution. The association has, on different occasions, granted research fellowships for investigations in milling technology. Members of the association have reported on small research projects carried on in their individual mills, but there has not been any organized and directed research program attempted by the association.

The above outline is only a suggestion offered by this journal as a possible solution to the postwar labor situation and something that could be put on a sound, continuing basis for the training of operative millers and for the conduct of much-needed research in milling technology.

Perhaps such a vocational school is possible. Perhaps it is not. But it seems to this writer that the proposition is at least worth investigating thoroughly, worth giving some serious consideration to. The lumber, poultry, automotive, foods, livestock, agricultural and countless other industries are beneficiaries of federally supported training and research. What does the milling industry propose to do?

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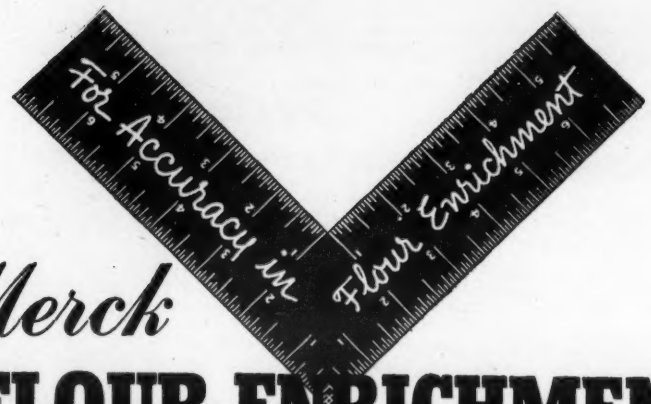

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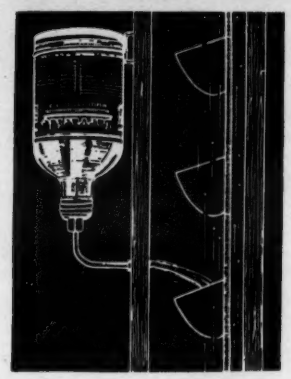

The Fumaleg, with LARVACIDE dispenser bottle attached at convenient point to upside of each leg.

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SAVES TIME IN FUMIGATING SMALL MILLS and in SPOT TREATMENTS in LARGE MILLS . . . avoids exposing operator to fumes.

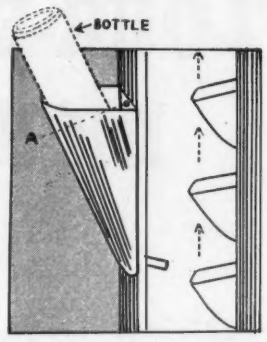
Treats leg and much of connecting machinery by simple technique usually requiring no mask. • System costs only a few pennies and treatment can be made after closing time, with machinery running for a minute or two. • Write for special FUMALEG folder. • LARVACIDE *kills insects in all stages, including the egg.*

ALTERNATE EQUIPMENT

when using bulk LARVACIDE *out of cylinder, instead of dispenser bottles.*

***Metal* LEG VASE**

Draw liquid from cylinder into pop or other 12 ounce bottle. Upend bottle into vase and leave it to drain. Vase is attached to leg with single screw (a). • Simple, inexpensive; nothing to break or get out of order. • For more information, write



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LARVACIDE is shipped in cylinders 25-180 lbs. and 1 lb. dispenser bottles, each in sealed can, 12 to case. Stocked in major cities.

★ ★ ★

CEREAL CHEMISTRY CONVENTION NOTES

★ ★ ★

White carnations for the coat lapels seem to be the official convention badges. The carnations are supplied by Wallace & Tiernan Co., Inc., and the custom is one of long standing. In addition to the carnations for the men, the firm sends bouquets to the wives of the convention delegates. Mrs. Robert Anderson and Mrs. W. M. Tinkham "did the honors" this year as official flower ladies, greeting the delegates as they entered the convention hall each morning and putting carnations in the lapels.

» »

Charles R. Veeck's fame as a fisherman was known to Dr. Betty Sullivan, president of the association, who introduced Mr. Veeck as one of the speakers at the opening session. She made reference to the story about Mr. Veeck in a recent issue of the MILLING PRODUCTION SECTION of this journal, adding that "now Mr. Veeck has the opportunity to 'throw his line' again." Several in the audience later good naturedly accused Mr. Veeck of throwing a line, but not a fishing line.

» »

Members of the Cincinnati section met for a group breakfast at 7 o'clock the morning of May 24. The secretary of the section reported 100% attendance of all delegates.

» »

The weather was perfect throughout the week, but unfortunately gasoline rationing prevented any general sightseeing trips.

» »

Residents and former residents of Canada held a dinner May 25. There were about 35 in attendance. Drs. E. G. Bayfield of Kansas State College and W. G. Geddes of the University of Minnesota were absent from the dinner because of other engagements.

» »

The visiting ladies were kept busy throughout the convention with a bridge luncheon on Tuesday, a Dutch treat luncheon on Wednesday, followed by a visit to Radio City, and on Thursday the ladies were guests at a luncheon given by Wallace & Tiernan Co., Inc. Mrs. Leslie R. Olsen was chairman of the committee that arranged the events for the ladies.

» »

The banquet and entertainment was attended by about 450. The banquet was followed by an excellent program of entertainment and then dancing. L. R. Olsen was chairman of the committee on arrangements for the banquet, entertainment and dance.

» »

Mr. and Mrs. Henry E. Kuehn were being congratulated on their twentieth wedding anniversary May 24. Mr. Kuehn is vice president of the King Midas Flour Mills.

» »

Dr. Frank Hildebrand, General Mills, Inc., received many fine compliments on the efficient manner his program committee functioned. There were 54 reports on the program and each session was conducted on a time schedule comparable to a railroad dispatcher's schedule. Only one paper over-ran its allotted time on the program.

» »

The symposium on preparation of technical reports and scientific papers received much favorable comment. Dr. W. F. Geddes, editor of the association's journal, Cereal Chemistry, organized the symposium and the speakers directed several frank criticisms at their fellow scientists concerning the manner in which their technical reports were prepared. "They Understand Not One Another's Speech," an address by T. Swann Harding of the Office of Information, U. S. Department of Agriculture, was quite effective in its lampooning of scientific "gobbledygook" language.

» »

Interest held until the close of the final session, with the room well filled when the last speaker finished. The chemists remember their last meeting in Toronto, and are looking forward with pleasure to visiting that city again. The decision to go to Toronto, naturally, pleased the Canadian delegates.

Are You Good at Guessing?

IF you are one of those rare individuals whose knack for guessing at the valuation of your mill property is so good that your "guesstimate" will check with your fire insurance damage appraiser, we couldn't be of much help to you.

The chances are, however, that your guesswork appraisal, based on hunches, incomplete inventory records, outmoded and out-dated cost accounts and a hit-or-miss system of appraising would not stand up under the close scrutiny of the insurance examiner.

We have made accurate appraisals for scores of satisfied mill owners and operators who do not believe in guesswork valuations. Determining the valuation of mills is our business and guesswork has no place in our thorough method of evaluating mill properties.

Fire insurance companies accept our appraisals. Would they accept your estimate?

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ANALYSES
FLOUR AND WHEAT
PROMPT ACCURATE LABORATORY SERVICE
THE MID-WEST LABORATORIES INC.

Personnel Problems

(Continued from page 5a.)

Goebbels. An Associated Press dispatch dated May 12 from New York announces that since Henry Kaiser took over the plants the total man-hours for each plane were reduced from 27,000 to 9,900 and absenteeism was cut from 13 to 5%. The firm is now 25% ahead of its delivery schedules for the navy. Kaiser did not do this singlehanded—he needed help. Perhaps his outstanding quality is to recognize talent when he sees it. It can be said definitely that bad management was at least partly to blame at Brewster.

Officials of the War Manpower Commission tell us that the supply of manpower is practically exhausted. We will have to do the best we can with what we have. One source of manpower is men being discharged from the armed services. Unless they possess special qualifications, they are sent to the industries with the highest priority for men—aircraft factories especially. Some men will become available as the production of certain war goods is curtailed. However, the most that can be expected is that this will balance the further withdrawals from industry for the army and navy. The prospect is anything but encouraging. Especially in the critical labor areas, the only hope is the greater utilization of woman power.

Our production on critical war jobs would be disastrously impaired if it were not for the amazing accomplishments being made by women. At the Boeing Aircraft Co. plant at Seattle, makers of the famous Flying Fortress and the new Super Fortress, women are doing a job that is little short of miraculous. The exact number of workers employed by this firm in the Seattle area is a military secret but it can be said it is many thousands. Women comprise over 50% of this total. Due to rapidly expanding production, many thousands of workers were needed at once. Jobs that were formerly thought of as "do-able" only by a man had to be rearranged for the utilization of women. This firm, in my opinion, has done an outstanding job. Conversion from manpower to womanpower has been taking place all over the country. It is an

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These are only a *few* of many varied products and problems studied by this laboratory during the past two decades.

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THE WEEVIL-CIDE COMPANY
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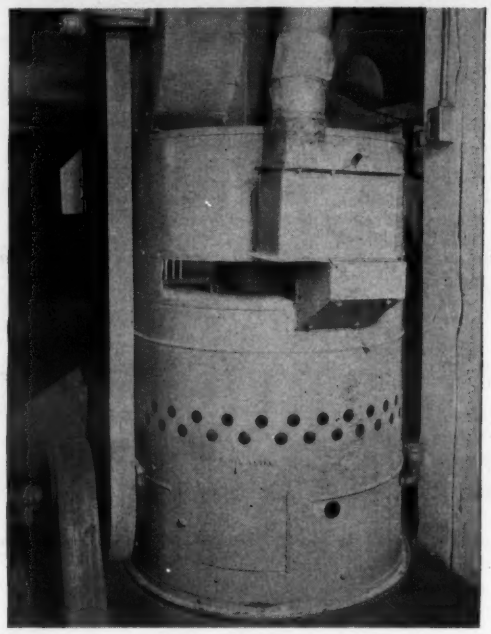
HAAKY SEALED FLOW ASPIRATOR



As used for final cleaning in a 1,400 bbl. mill

assures BETTER Results — *because:*

1. The patented HAAKY Floating Unit Control provides a uniform and automatically controlled flow of grain passing to aspiration.
2. HAAKY operation combines and synchronizes both suction and centrifugal force. Dust and chaff are removed and a light polishing is provided.
3. Fan designed especially for grain aspiration—assures ample suction.
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object lesson from which we can all take inspiration.

In my limited experience with womanpower, I have found that women are a great deal more painstaking and conscientious about their work than are men. On some types of work they are superior to men. The only limit of their capabilities is their physical strength. I know of at least one instance in a Pacific Coast mill where a woman is holding down a full time feed packing job on 100-lb sacks. Such women are not common but are obtainable. The resourceful operator will rearrange the work or change the equipment to utilize women.

THE PROBLEM OF LOST TIME ACCIDENTS

Many years ago Mark Twain said, "Everyone talks about the weather but no one does anything about it." It is indeed unfortunate that the promotion of plant safety is something that many times is just talked about. Safety reports, like insurance reports, are too often merely noted and filed away. If a critical shortage of manpower is to continue to exist, possibly for another two years, management should treat their present supply as something indeed precious. Every accident prevented preserves our badly needed manpower. Every worker involved in a loss time accident further complicates your personnel program. Allow me to make some concrete suggestions.

1. Some one person should be held responsible for plant safety. Committees are not too successful. This man can be the head miller, maintenance foreman or plant superintendent.

2. Examine your accident frequency and severity. Compare them with other plants in your industry. These ratios are calculated as follows:

$$\text{Frequency rate} = \frac{\text{Disabling injuries} \times 1{,}000{,}000}{\text{Number of man-hours exposure}}$$

$$\text{Severity rate} = \frac{\text{Loss time days} \times 1{,}000}{\text{Number of man-hours exposure}}$$

Accident frequency can be judged as follows:

Under 20 is excellent. (Boeing Aircraft for 1943 was 15.39. During the same period General Motors was held to 8.)

From 20 to 30 is good but not outstanding.

Above 30 is poor, some program of plant safety should be inaugurated at once.

Accident severity should not be above 1. A normal figure would be 0.20.

THE PROBLEM OF THE NEW WORKER

Too often the new worker is left to shift for himself after a casual introduction to the plant. It is a pathetic fact that if you neglect properly instructing and introducing a new worker some "busy body" will be certain to take care of it for you and in a manner that decidedly would not conform to your own ideas. Remember also that first impressions are often lasting ones.

Wartime operating conditions do not always permit the supervisor spending as much time as is desirable with the new worker. It is usually impossible to give him all the time he deserves. As a time-saver, you might provide the new employee with a booklet or mimeographed sheet that gives the following information:

1. Conditions of employment.
   a. Obligations to labor unions.
   b. Posted rules relative to smoking, sanitation and the like.
2. Employee benefit plans such as group life insurance.
3. A short history of the company.
4. Names and titles of principal officers.
5. Job classifications and rates of pay.

——BREAD IS THE STAFF OF LIFE——

Sprouted Cereals and B Vitamins

Recent studies comparing the vitamin B complex content of cereal grains before and after germination reveal marked increases in the amounts of these vitamins in the sprouted grain. Among the cereals tested were oats, wheat, barley and corn. All showed substantial increases in riboflavin and niacin content, with somewhat lesser increases in the case of biotin, pantothenic acid, folic acid and inositol. The thiamine content remained almost constant in most instances.

MILLIGRAMS PER 100 GRAMS DRIED SEEDS

	Thiamine	Riboflavin	Niacin
Oats	1.13	0.08	0.73
Sprouted oats	1.22	1.16	4.40
Wheat	0.70	0.13	6.20
Sprouted wheat	0.90	0.54	10.30
Barley	0.68	0.09	6.75
Sprouted barley	0.90	0.72	11.50
Corn	0.55	0.11	0.94
Sprouted corn	0.51	0.43	3.95

It is possible, as a result of the information revealed in these experiments, that changes in present methods of utilizing cereal grains may be established in order to secure maximum vitamin values from these foods for animal and human nutrition.—*Science.*

THE PART OF THE MILLING AND BAKING INDUSTRIES IN THE WAR EFFORT

It has been stated that one of the main causes of the internal collapse of Germany in World War I was a deficiency in essential Vitamins in the diet of the general population. Recognizing this, one of the first concerns of our government has been to insure that no such lack occurs not only in the diet of our armed forces, but also in that of those on the home front. The enriched flour and bread program has been a direct result of this policy.

It is greatly to the credit of the milling and baking industries that they cooperated voluntarily and immediately in this program and in fact were enriching their products with vitamins and minerals even before the adoption of the idea by any official agency. This wholehearted cooperation has continued and as a result our people are the best fed of any on earth.

The role of the manufacturers of the synthetic vitamins in insuring the success of the program by providing ample supplies of these essentials must not be overlooked.

We are proud to state that we have exerted every effort towards the production of our synthetic vitamins and today can offer Thiamin Hydrochloride and Riboflavin in adequate amounts for this highly essential use.

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Milling 60 Years Ago

Arrangement of Scalping Cloths

By Louis H. Gibson

WE all know that the clothing of the scalpers begins by making the first one the coarsest and the last the finest, with intermediate gradations. This is made necessary, in the first place, by the size of the corrugations which perform these reductions. As to the size of the grain, it is easy to see that the largest middlings can be taken from the whole grains or from large parts thereof which include the full thickness or size of the inside of the wheat berry. For example, larger middlings can be taken from a whole or a half grain of wheat than from the material going to the fifth or sixth break, which contains only a small proportion of middlings stock. Thus the largest middlings will naturally be taken from the largest stock, or from stock which contains the material from which middlings are made in the largest sized pieces. In the second place was mentioned the size of the corrugations as influencing the numbers of cloth on the scalping reels. No one can intelligently determine these numbers without knowing the corrugations to be used for the various breaks. The stock being of the right character for the various breaks, the size of the corrugations will determine, to a large extent, the size of the middlings. For instance, if one were to use finely corrugated rolls for the first break, not nearly so large a proportion of large middlings could be made as with the coarser corrugations; and, as there is an abundance of stock out of which to make large middlings on the first break, it is fitting that the corrugations should be coarse, which implies that the scalping wire should correspond in mesh to the size of the middlings made. As the stock gets lighter, as the proportion of middlings on the wire decreases, proportionately finer corrugations are required. These two conditions together —that is, of the stock and corrugations —imply that there will be finer middlings; and as they are finer, the scalping numbers will naturally correspond.

It should always be understood that it is desirable to remove such middlings from the various breaks as have no adhering particles of bran, and as such possibilities are indicated by the conditions named above, the scalping numbers should be arranged with reference to such a result. Where they are too coarse it means that there is material to be handled on smooth rolls which could be more advantageously broken on the breaks following those from which such middlings were taken. Where such middlings are sized or reduced on the smooth rolls, if further implies that there is a large amount of coarse, branny material to be carried through the tailings rolls and subsequent reductions, which renders the work of finishing this material and the finer stock carried along with it much more difficult than it otherwise would be. Thus the advantage of arranging the scalping cloths so that the product of middlings will contain a minimum quantity with adhering portions of bran, is apparent. At the same time it is desirable that such clothing should be coarse enough so that the entire product of desirable middlings may pass through the cloth rather than over the tail and to the next reduction.

In mills which use only four or five breaks, the clothing of the scalping reels is finer as the corrugations are smaller and the grinding relatively closer. Furthermore, it is not desirable to have to handle large middlings in such mills as these, because everything being cut close as to the cost of the plant, there is not enough reduction and separating machinery to do full justice to larger middlings. For this reason in such mills the corrugations should be finer, with the intention of effecting the purpose above named; consequently the scalping reels would have finer wire or cloth.

Another thing affecting the clothing of scalping reels is the character of the wheat that is ground. Soft wheat will make larger middlings than hard, brittle wheat, and large wheat will make larger middlings than small wheat, which otherwise has the same general characteristics.

In connection with the breaks it will not be out of place to mention scalping reels, as a proper scalping is necessary for good reductions. The reels should increase in length or capacity as the breaks advance. It is almost as important that they should not be too long as it is that they should be long enough. When they are longer than is necessary to make the separation of flour and middlings from the coarser material, they make flour in the reel and force fine bran and other deleterious material through the wire cloth. If the reels are too short they carry over flour and middlings, which is wrong in itself, in that it reduces the middlings at an improper stage in the process, while the flour is carried, it may be, into grades where it does not belong. Again, the unreduced portions cannot be properly handled when mixed with material not requiring reduction. The following lengths of reels have been found to be satisfactory in a 400-bbl mill, viz: First break, 6 feet; second, 8 feet; third, 10 feet; fourth, 12 feet; fifth, 14 feet. For the sixth break a common form of centrifugal reel six feet long may be used, clothed with 20 wire, the tailings of which reel go to the bran bin, while the product is again scalped on an 18-foot silk reel, where it is graded into three grades.

——BREAD IS THE STAFF OF LIFE——

Hydrocyanic acid, when used as a flour fumigant, produces an appreciable and detrimental influence upon the bread baking quality. This effect is not apparent after thorough aeration of the flour.—*H. D. Young and E. G. Bayfield in Cereal Chemistry.*

DIABLEND

Top Quality

Malted Wheat Flour

It is essential that your hard wheat flours bake consistently to your established standards. But improper diastatic treatment can spoil your most careful wheat selection and milling methods.

DIABLEND malted wheat flour assures you of uniform quality and quantity of diastatic action. Selected wheat is malted in our own malt plant under automatically controlled atmospheric conditions. DIABLEND is manufactured to a standard level of maltose, milled so it is free flowing for accurate feeding.

We will provide samples for experimental work in your own laboratory, or you may send to us samples of your untreated flours for analysis. Maltose or gassing power analyses in our laboratory are free to DIABLEND users. Ask for a sample and quotation of DIABLEND today.

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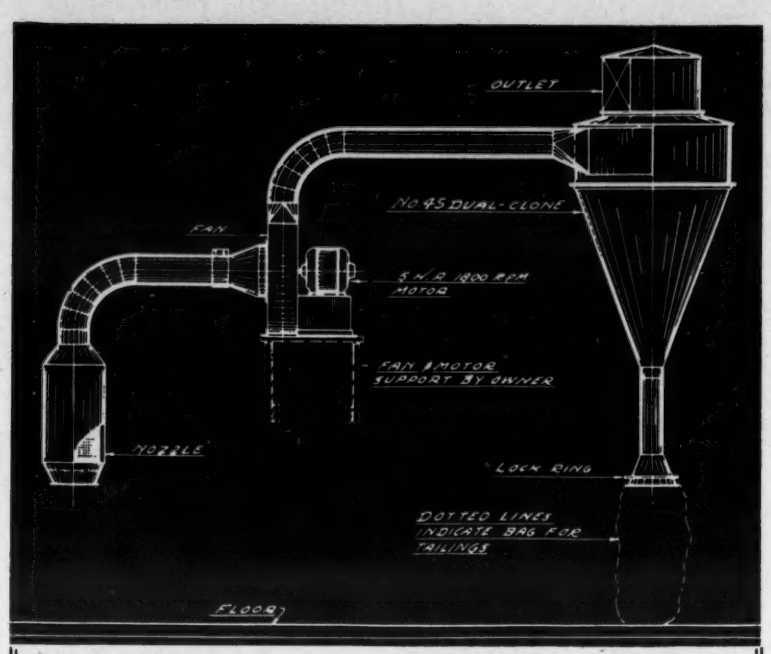

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DAY Dust Control

Close Grinding

(Continued from page 4a.)

breaking as it was on the close breaking.

Ash and poor color in flour are not always caused by breaking too closely. Great care must be exercised in grinding on the reduction rolls. Grinding should be just close enough to make all the flour possible without making flakes on the smooth rolls. If the load is so heavy on the first and second middlings rolls that the middlings cannot be reduced without flaking, a cut roll should be used. But be sure the middlings sent to those cut rolls are clean. If a miller does not have enough purifiers in his mill to enable him to get a clean grade of middlings, he had better continue using the smooth rolls or put in enough purifiers to allow for proper cleaning of the middlings before sending them to the rolls.

The sifters and reels must be properly clothed. Clean middlings will always produce a bright, clean flour with a low ash content and of good baking quality —two things that the customer insists upon.

If the flour is off-color and is high in ash, the miller had better look out for the boss, for he will be out of humor and cross as a bulldog.

Open breaking isn't any cure-all for all of the miller's troubles, however. Many of the headaches may be caused by the quality of the grain bought by the grain buyer. In some mills, it is reported, the grain buyers expect the miller to make high quality flour from an inferior grade of wheat—and that is something that even Superman cannot accomplish.

The company that I was working for when the tests reported here were made did not buy any wheat that was not first class. I am proud to say that the company that I am now with follows that same policy. If I cannot make good flour, it is not the fault of the grain department, but my own shortcoming. I am going to continue to follow the open-breaking system and not take any chances on damaging the quality of our flour.

——BREAD IS THE STAFF OF LIFE——

Smut is not the only substance which may cling to wheat berries and discolor flour made therefrom, often without increasing the ash content. Among other substances are molds of various kinds and these may affect the quality of the flour considerably, according to Jago.—*Studies in Practical Milling.*

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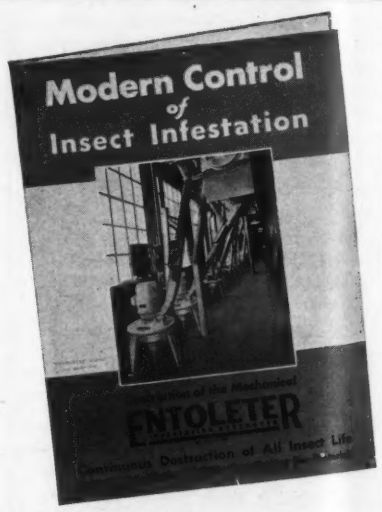

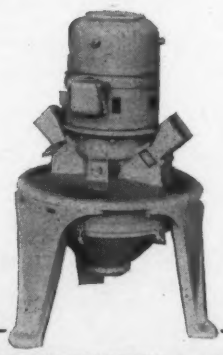

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Operated by the same family of eastern Kentucky farmers for the past 118 years, this quaint corn mill continues to produce. The mill, now operated by Sam Engle, is located on Troublesome Creek near Hazard, Perry County, Kentucky. Troublesome Creek, flowing through a rocky valley, has experienced many flash floods and was so named because of this characteristic. The mill is set on high piling to keep it above any normal flood stage.

FLOUR STRENGTH

The amount of protein in bread wheat is often considered a measure of strength. There is considerable disagreement as to what characteristics are embodied in the term "strength." The structure of gluten in dough is apparently that of an attenuated three-dimensioned mesh in which the starch, water and other materials are held. Since the amount of gluten is closely correlated with the protein per cent, the number of strands, or the density of the mesh, depends upon the protein content. Thus, in a dough made from high-protein flour there would be more strands than in a dough from a low-protein flour. The quality of these strands is also a factor in the strength, the same as the strength of a rope depends on two factors—the number of fibers and quality of the fibers.—*C. O. Swanson.*

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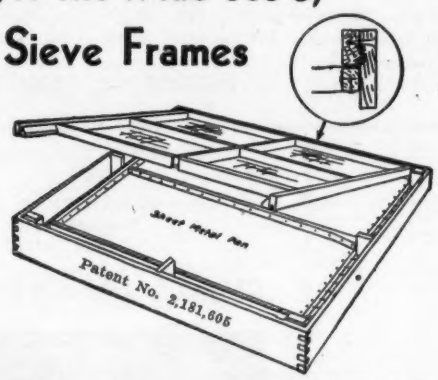

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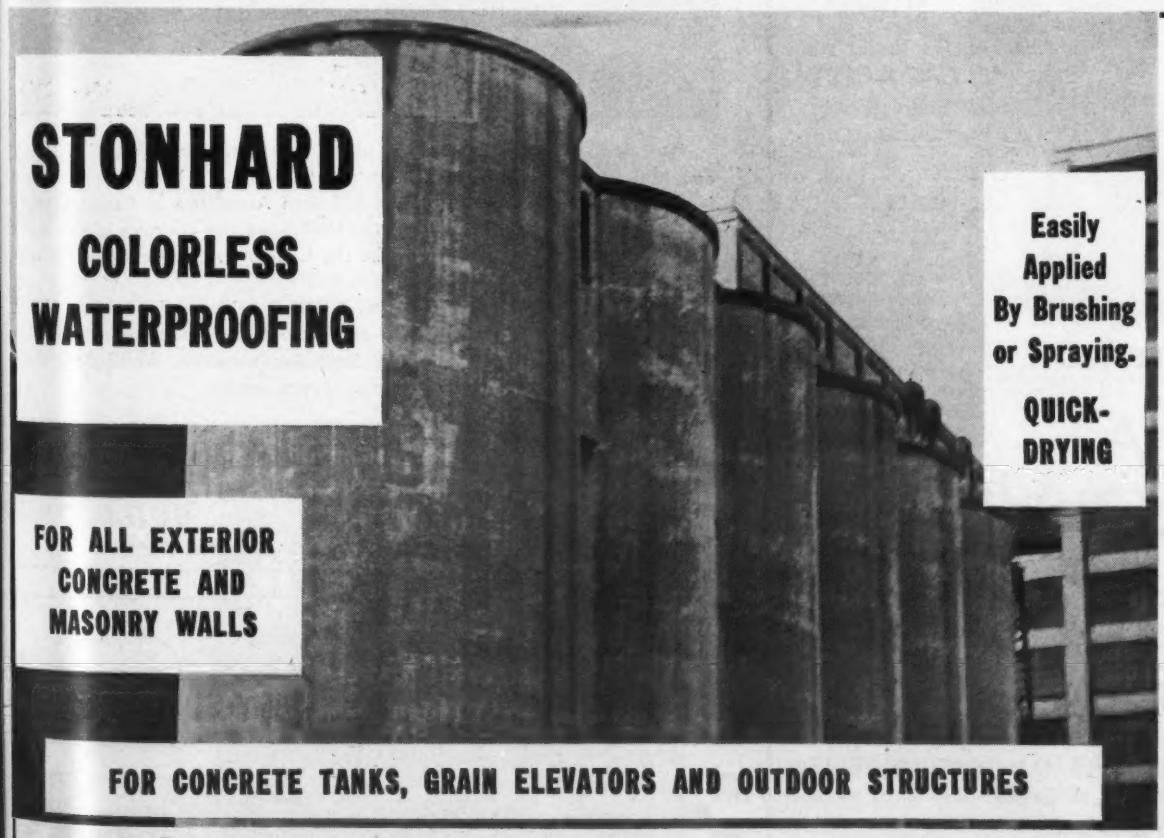

STONHARD
COLORLESS WATERPROOFING

FOR ALL EXTERIOR CONCRETE AND MASONRY WALLS

Easily Applied By Brushing or Spraying.
QUICK-DRYING

FOR CONCRETE TANKS, GRAIN ELEVATORS AND OUTDOOR STRUCTURES

ALL STONHARD PRODUCTS ARE MAINTENANCE SHORT CUTS!

STONHARD RESURFACER assures floors that are warm, damp-proof and fire-resisting. Any handyman can apply it.

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STONHARD STONTITE stops leaks against direct hydrostatic pressure. Keeps water out of storage basements, etc.

STONHARD SILOTITE is an acid-resisting and waterproof liner for silos, tanks and grain storage bins.

STONHARD STEEL PROTECTION COAT protects metal equipment and metal structure against weather.

★★ WRITE AT ONCE FOR FREE TECHNICAL INFORMATION ON YOUR FACTORY PROBLEMS ★★

STONHARD COMPANY ★ *Established in 1922*
881 Terminal Commerce Bldg. PHILADELPHIA 8, PA. Sales Offices and Stocks in Principal Cities

When Does Wheat Die?

By Charles H. Briggs

HOW long is wheat capable of living when carefully preserved? Stories of wheat taken from the tombs of Egypt and planted and producing wonderfully productive plants are occasionally told, but are as false as similar stories about corn, for it is well known that corn (maize) was unknown to the Old World before Columbus' discovery.

The vital force exists in the embryo of the wheat grain, commonly called the "germ." The germ may be carefully dissected from the rest of the wheat grain and will commence growth under favorable circumstances. The existence of life in the germ can only be shown by its ability to sprout in a germination test with water, though numerous attempts have been made without success by other methods to discover the presence of the vital force. The living grain even in the dry condition continuously breathes or respires, giving off carbon-dioxide gas in extremely minute amounts until finally its life is completely gone. No change in its appearance can be observed. Dead grain is absolutely identical in every observable characteristic with living grain.

It would be interesting to learn the longest authentic record of wheat and the conditions under which it was preserved. Dry wheat kept at very low temperature would doubtless remain viable for a longer time than wheat preserved in the farmer's bin or the elevator. In sample wheats preserved in bottles, the Howard Laboratory found no wheats older than 12 years showing any germination whatever. It is probable that 15, or at the most 20, years is the greatest age for which wheat can be maintained alive. It is possible, however, that at extremely low temperatures such as that of liquid air wheats might be kept alive even for a century or more.

★ WITH THE CEREAL CHEMISTS ★

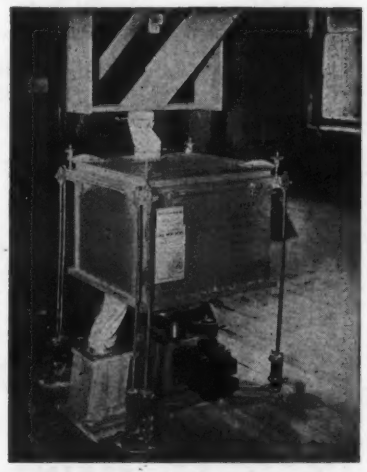
Drs. F. C. Hildebrand and F. A. Collatz, both of the research staff of General Mills, Inc., are shown in the upper picture during a lull in registrations for the 30th annual convention of the American Association of Cereal Chemists, held in Minneapolis May 23-26. Dr. Hildebrand was chairman of the program committee for the meeting, while Dr. Collatz was a member of the ar-arrangements committee.

Shown in the lower picture are W. L. Rainey, Commander-Larabee Milling Co., Minneapolis, chairman of the arrangements committee, with Dr. R. C. Sherwood, Office of Distribution, War Food Administration, Washington, who was one of the principal speakers on the opening session.

NIAGARA

SMALL DIMENSIONS!

HIGH-SPEED!



HIGH-CAPACITY!

HIGH-EFFICIENCY!

"NIAGARA"— GYRO-WHIP — SIFTER

UNEQUALLED FOR FLOUR AND FEED REDRESSING——

FOR RELIEVING BOLTER SECTIONS, ELIMINATING REELS, HANDLING TAIL STOCKS.

1 TO 4 SECTION UNITS!
2—8 SEPARATIONS PER SECTION.

RICHMOND MFG. CO.
LOCKPORT, N. Y.

The BARNETT & RECORD CO.
MINNEAPOLIS, MINN.
DESIGNERS BUILDERS
Grain Elevators—Mill Buildings—Industrial Plants

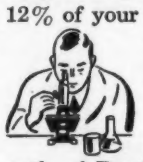
★ The Esmueller Co. ★
ST. LOUIS, MO. KANSAS CITY, MO.

CHECKERBOARD ELEVATOR CO.
MILLING WHEAT • COARSE GRAINS • MILLFEED
Hard and Soft Winter Wheat
ST. LOUIS • KANSAS CITY • MINNEAPOLIS • DENVER • BUFFALO

Here's a practical way to close 10% more cotton or burlap bags WITH THE SAME AMOUNT OF THREAD

Closure thread is precious these days. The mill that can make a pound of thread sew more bags is not only helping itself . . . it's helping to win the war.

If you're using Bemis Special Thread and if, as a matter of habit or convenience, you use the same ply thread in the looper as in the needle of your bag closing machine, you can save 7½% to 12% of your thread poundage.



The extra strength of Bemis Special Thread (proved both by laboratory test and by the experience of hundreds of mills) makes it entirely practical to use a lighter looper thread for closing bags for domestic shipment.

Here are the proper combinations:

With 6 Ply Needle Thread, use 4 Ply Looper Thread
With 5 Ply Needle Thread, use 3 Ply Looper Thread
With 4 Ply Needle Thread, use 3 Ply Looper Thread
With 3 Ply Needle Thread, use 3 Ply Looper Thread

* * *

In buying Bemis Special Thread, you'll want to divide the order IN POUNDS about as follows:

For the 6-4 combination, 75% Needle Thread and 25% Looper Thread

For the 5-3 combination, 80% Needle Thread and 20% Looper Thread

For the 4-3 combination, 75% Needle Thread and 25% Looper Thread

And here's your saving IN POUNDS OF THREAD when you use a lighter looper thread: With the 6-4 combination—10%. With the 5-3 combination—12%. With the 4-3 combination —7½%. Or, taking it the other way, you can sew proportionately that many more bags with the same amount of Bemis Special Thread.

A mighty smart economy, isn't it?

BEMIS BAGS

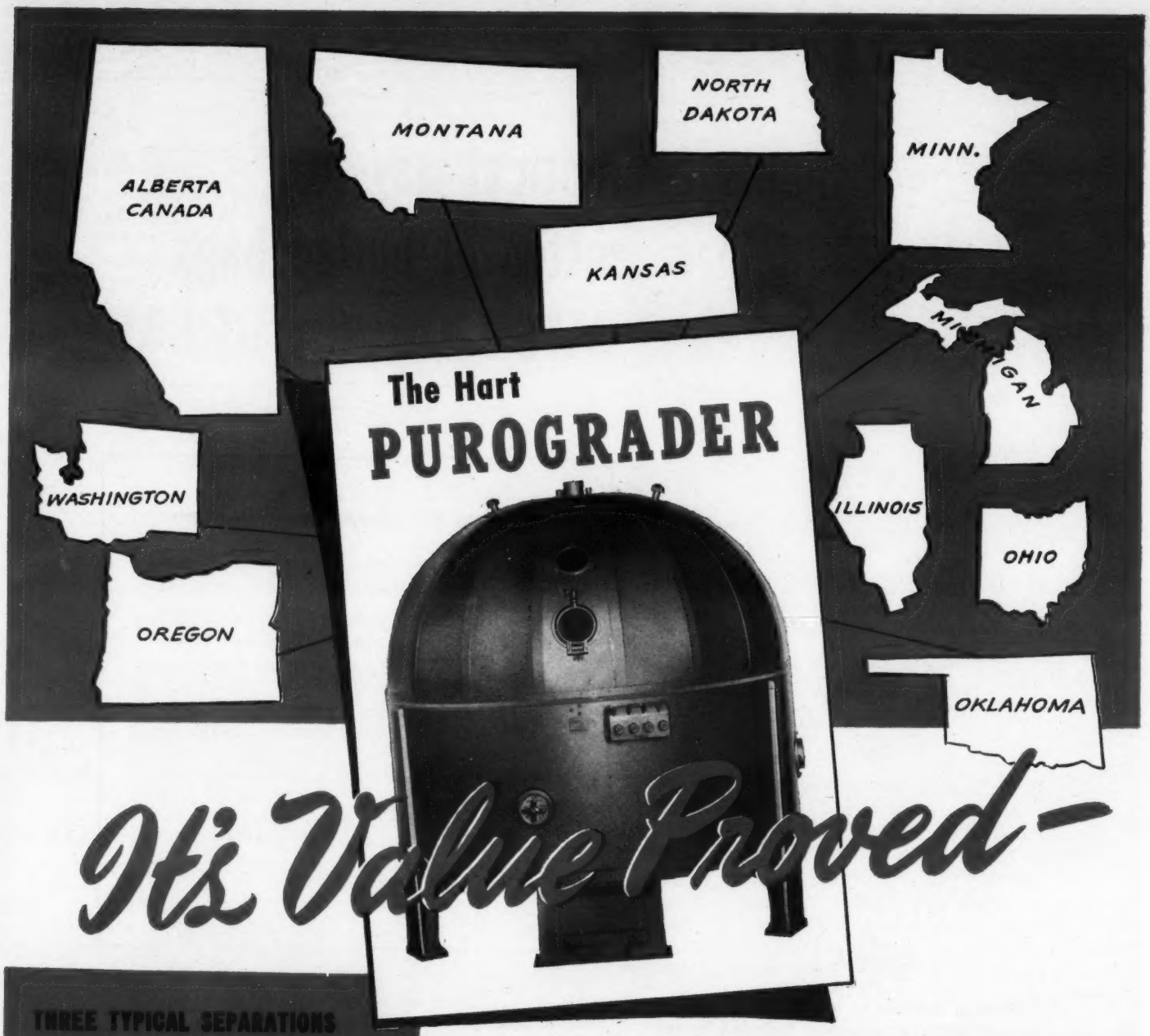
BEMIS BRO. BAG CO.

OFFICES: Baltimore • Boston • Brooklyn • Buffalo • Charlotte Chicago • Denver • Detroit • East Pepperell • Houston • Indianapolis Kansas City • Los Angeles • Louisville • Memphis • Minneapolis Mobile • New Orleans • New York City • Norfolk • Oklahoma City Omaha • Peoria • St. Helens, Ore. • St. Louis • Salina • Salt Lake City San Francisco • Seattle • Wichita • Wilmington, Calif.

BETTER BAGS FOR 86 YEARS

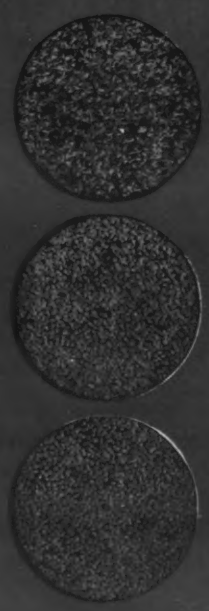
We Hope There's Enough To Go Around

As with so many other commodities these days, the supply of Bemis Special Thread has trouble keeping up with the demand, especially when so large a part of it is earmarked for government use. So . . . it may be impossible to fill all orders. However, we'll do our best. And if all users of Bemis Special Thread will follow the suggestion in this advertisement, the available supply will go farther.



It's Value Proved—

THREE TYPICAL SEPARATIONS



Large middlings going to coarse sizings roll. Note uniformity of size.

Smaller middlings going to fine sizings roll.

Loose bran. Can be sent directly to feed.

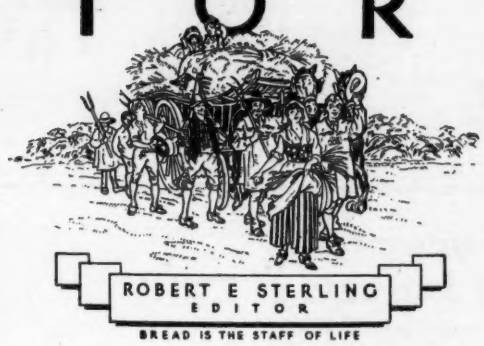
Under All Conditions on All Types of Wheat

From Washington to Ohio—from Canada to Oklahoma—millers who have installed the Hart Purograder have had strikingly similar experiences. They have seen operating costs reduced and they have seen definite evidence of improved quality—better color, better control of ash, greater retention of moisture, longer extraction of high quality patent. Purograder principles, introduced as a "revolutionary development" have now proved themselves in action under varying milling conditions on all types of wheat. Millers who are using Purograders are enthusiastic in their praise. Write today for more facts and figures and for priority information.

HART-CARTER COMPANY

680 19th Avenue, N. E. Minneapolis 13, Minnesota

EDITORIAL



"LET US NOW PRAISE FAMOUS MEN"

PILLSBURY is celebrating its seventy-fifth anniversary. There have been various commemorations and observances in recent weeks, most of them chronicled in the pages of this journal, and doubtless there will be more before the diamond jubilee year of this great milling enterprise is ended.

No one in the flour trade or associated with it needs any reminder of how large in the milling industry is written this name of Pillsbury. No one—not even a competitor—will begrudge the public acclaim that has been accorded to the event and to the family whose story has become such an essential part of the history of bread.

We think it would be safe to carry this thought even a considerable step farther, for it seems to us that the flour trade as a whole looks with as much pride upon the continuous accomplishment and the sustained reputation of the Pillsburys as does the house of Pillsbury itself.

It is trite, of course, to repeat the old truth that a nation's history consists of the biographies of its great men. But the truism can be applied, perhaps, with less cliche and certainly with no less propriety to industry and its leaders. And so we say that the Pillsbury family is of the very warp and woof of the historical fabric of flour milling. This is true not only with respect to the milling center at Minneapolis, where civic life for four generations additionally has been influenced by the various business and financial activities of the various Pillsburys—by their public services and by their many social and community contacts—but also with reference to the national scene. For the 75 years of Pillsbury Flour Mills Co. history is coterminous with virtually the whole period of modern flour milling in America.

It is through no accident that the flour miller of today enjoys so large a measure of respect and confidence as is unhesitatingly and unquestioningly given him by his fellow citizens. It is due to the fact that Pillsburys and men of many another name of merited renown have lent their integrity to the trade. Their personal qualities have been multiplied within their own business organizations and have been extended in widening circles to the market places in which they deal.

With such a shield before the flour milling industry there is nothing remarkable in the fact that the public should be indifferent, as it undoubtedly is, to such technical and, indeed, politico-social attacks as that of the current anti-trust trial now dragging its weary way through a federal court in Chicago before a sleepy and very likely perplexed jury.

Final note on this subject of "Pillsbury's Progress," as a local newspaper editor so aptly captions it, should be a reference to the current head of the house. To mention Philip W. is not to intimate that the older heads, John S. and Alfred F., are entirely out of the picture, but to indicate where the active direction now lies and whither it points. It points vigorously in the accustomed progressive direction. Clearly the present Pillsbury seems determined to live up to his name and also to add to it new clusters and lusters.

——BREAD IS THE STAFF OF LIFE——

ABOUT FACE ON THE FEED FRONT

OBVIOUSLY the shouting time hasn't fully arrived, but it must be granted that there is some justification for the smile of optimism that lights up the official countenance in Washington when it is turned in the direction of the feed front. Some of the crystal gazers there, in spite of past errors, are ready to predict that we are over the hump and that if the 1944 corn crop reaches expectations the nation may go into the new crop year with feed supplies surpassing requirements.

This reversal in thinking got off to a good start from the reduced rate of corn disappearance in the first quarter of 1944 and an indicated heavy winter wheat crop. Furthermore, hog liquidation gives evidence of meeting government recommendations, the official prophets think, and may even exceed these goals.

There is a hazard, of course, in the fact that centralized government control reacts slowly to trends, where private industry responds quickly to economic forces and checks policies automatically. An example of the slowness of government operation was the inability of the War Food Adminstration to adjust its grain-livestock policy before a dangerous situation developed. Under government control the feed trade has successively experienced serious protein and carbohydrate tightness within one year, both out of stubborn adherence to grain policies the dangerous nature of which had been cited months before by private business.

Government policies now seem to be reversed and the feed program traveling full speed ahead in another direction. Liquidation of animals is progressing, subject to dangerous excesses, and imports of corn are being promoted. In short, all the tomtoms are beating a new tune with renewed vigor, and the more enthusiastic optimists see a swing into a situation where it is altogether possible that feed stocks will exceed the needs of grain consuming animal units next year. For the Washington food controllers this would, indeed, be a very happy issue out of their adversities. The flour and feed trades, however, will not be so quick to forgive and forget the bin-scraping to which they were reduced, and from which they still suffer, as a result of previous happy but reckless government agency thinking.

——BREAD IS THE STAFF OF LIFE——

ENRICHMENT COMPLIANCE

FOR sixteen months enrichment of bread has been required of every baker by law and the vast majority of bakers have conscientiously followed that requirement. But there are some who even now persist in ignoring this wartime regulation for better bread. Within the past few weeks War Food Administration officials have found it necessary to warn about 50 bakers in various markets that they are trifling with Uncle Sam in not producing bread with a vitamin and iron content up to the standard set forth in War Food Order No. 1. Some of these violations may be due to production errors, but it hardly seems likely that all could be due to fumbles in handling the little pills. Perhaps there are some naive souls who nurse the hope that, since neither they nor their customers with eye or tongue can distinguish the vitamin loaf from any other, nothing is lost save honor in omitting the required ingredients.

So far the War Food Administration has not instituted any legal action against bakers whose bread has been found deficient but it has tested thousands of loaves in the laboratory and continued deficiencies doubtless will be prosecuted. Penalties are severe—a year in jail or up to $10,000 fine, or both. The War Food Administration can identify unenriched bread and has the means and the authority at hand to enforce its food orders.

It would be unfortunate for the baking industry—and needless to say for the flour industry as well—if the need for enforcement of the enrichment provisions of War Food Order No. 1 should bring out a rash of criminal prosecutions and newspaper publicity. The consumer may be somewhat vague about the meaning of consignment selling and similar purely industrial business matters, but neither the press nor the public is likely to overlook charges of the sale of substandard products. The public reputation of the baking industry is merely the sum of the reputations of its individual members and when an erring brother falls in the mud a little of the grime is splattered on everyone. It would be special adversity that it should happen now at a time when the industry is winning new friends among consumers, when housewives are learning to depend more and more on the nutritious products of the baker.

——BREAD IS THE STAFF OF LIFE——

A BETTER STARTING MARK

DEFENSE Supplies Corp., according to information coming from Washington, will adopt a late night hour, possibly near midnight, as the time for announcing future flour subsidy rates. The purpose is to give mills as nearly as possible an even start on applying their knowledge of what the new monthly figures are to be.

Decision to make such a change in announcement time doubtless was inspired by the booking scramble that took place on May 31. The June figures were established at 5 p.m., EWT, and were released at 5:30. First published wire reports appeared at 5:45, and distribution through trade channels was under way before 6. From that hour until midnight there were some very busy sales offices, and bookings by some mills were very heavy. Other mills, which did not receive information as to the sharp drop in the hard wheat subsidy rate until late in the evening or until next morning, found that they had missed the boat. The sensation was not exhilarating for these latter.

An exactly parallel situation might not, of course, recur. But DSC officials seem to have concluded that millers would best be served and satisfied if they could go to bed early and peacefully on the last day of each subsidy period, knowing that no next morning worms could be picked up by early birds on the night before.

For the speculative and sportive buyer and seller there would still be plenty of opportunity. The smart flour sales manager probably wouldn't want to admit his inability to figure the new rate, on the eve of its applicability, with a fair degree of accuracy. Some millers, indeed, are understood to have pegged the June rate three days ahead.

Small buyers complained of the May 31 situation. Their suppliers, they said, seemed to be too busy booking their big customers to find time for wiring or telephoning to the small fry. But maybe there's no need of doing any more fussing about this—let the midnight tocsin toll its impartial tale.

——BREAD IS THE STAFF OF LIFE——

THE PROTEIN AGE

IT wasn't so long ago that Nutrition, that prodigious infant among sciences, was hurrying us with seven-league stride from what now seems the rudimentary age of the calorie into the dizzy era of the vitamin. Grown gigantic now, the infant in Paul Bunyan boots promises to carry us into still more vertiginous realms. Just ahead lie the amino acids. The known list reads like something ultra-planetary: histidine, lysine, tryptophane, phenylalanine, methionine, threonine, argenine leucine, isoleucine and valine. Having had your calories, your iron, your thiamine, tomorrow the man at your elbow may be asking, "Have you had your aminos today?"

Less is known as yet about human protein needs than about vitamin requirements, but some of the nutritional prophets already are brushing aside the vitamins to take up the scent of histidines and phenylalanines.

One reassurance emerges from the scientific huddles: It does not now appear that there ever will be an amino acid pill industry. The required doses, so far as they are known or guessed, are too large. Daily requirements would oblige us to swallow boluses half the size of hen's eggs. Besides, there isn't any amino acid deficiency amongst us as yet, save for certain unfortunates whose organs are so mixed up they can't utilize the aminos in the ordinary foods they eat. But—can anybody be sure of anything in the amazing era of what-to-eat?

Canadian ★ ★

CONDUCTED BY A. H. BAILEY
Manager Canadian Branch
Lumsden Building *Toronto 2, Ontario*
Cable Address, "Palmking"

Government's Attitude Forecasts Tax Relief for Milling Industry

TORONTO, ONT.—Proceedings in the House of Commons at Ottawa last week produced a ray of hope for the milling industry in the matter of taxation. As has been frequently said in this correspondence the current basis upon which taxes for flour mills are levied contains some inequalities which have been unusually severe in regard to excess profits. This came about inadvertently and was not based on any intention of the government to single out flour milling for discriminatory treatment. The story is mixed up with special problems arising out of the subsidy to equalize prices for wheat with the ceilings on bread and flour. Now that a year of experience has shown exactly what is happening to the milling industry in the matter of net profits the government itself is concerned to make the necessary adjustments.

What occurred in the house last week was that the minister of finance in dealing with an appropriation to equalize the prices of wheat, flour and bread said: "I wish to make a statement on this. A statement never has been made to the house and I feel that the country is indebted to the millers for the co-operation they have given in this matter. . . . I always intended to say on some occasion, and I want to say now, that I greatly appreciate the co-operation the millers have given the government in this matter."

Then in another part of his address to the house Mr. Ilsley, in answering a question about excess profits, went on to say: "Yes. That is the reason why I expressed my appreciation of what the millers are doing, because it really worked out to reduce their profits on their export business although this is a subsidy in respect of domestic business. I do not know whether that arrangement can be continued for another year, because there is considerable objection to it by some millers, but they have been very fair to date; I will say that."

Canadian millers know, of course, that the minister could not make any promises in advance as to what the forthcoming budget will contain in the way of changes and betterments for them but they do at least now feel that their problems are understood by the minister concerned and that he is not unmindful of the impact of current rates on taxation on their industry. No one knows when the budget speech will be delivered in the house but it will not be long now until that event. Mr. Ilsley has the goodwill of this industry already to a remarkable degree and will add to this their gratitude if in the discharge of his duties as minister of finance he is able without prejudice to other interests now to set right a matter of taxes on flour millers which is obviously oppressive. A. H. B.

SASKATCHEWAN MILLERS WANT FLOUR ENRICHMENT

WINNIPEG, MAN.—The Saskatchewan Flour Millers Association will urge Dominion legislation for the removal of the ban on fortification of high grade flour synthetically. This decision was made at the recent convention held in Regina. It was pointed out that the British Ministry of Food demands such synthetic fortification with Vitamin B_1, and that the United States government approves this method of fortification.

Almost every independent flour mill in Saskatchewan reported it is operating 24 hours a day, and that the federal government is assisting in relieving the acute labor shortage by granting labor priority.

The new officers of the association are: president, B. J. Albright, Prince Albert; vice president, Charles Peaker, Yorkton; secretary-treasurer, P. P. Fitcher, Rosthern.

——BREAD IS THE STAFF OF LIFE——

GRASSHOPPERS NOT FEARED

WINNIPEG, MAN.—Dominion entomologists indicate that little or no damage is anticipated from grasshoppers in Manitoba this year. However, other insects are active, with the flea-beetle damaging rape-seed, and wire-worms, cereal crops. The latter are active in the southwestern part of the province.

CANADA'S APRIL MILLFEED PRODUCTION AT LOW POINT

TORONTO, ONT.—Canadian production of millfeed in April was the smallest of any month so far in this crop year, amounting to 62,987 tons as against 73,157 in March and 68,503 in April, 1943. However, the output of millfeed in the nine months of crop year ending with April shows a substantial increase over the corresponding period of preceding year. The quantity was 611,931 tons as against 593,303 in the same nine-month period of 1942-43. Production by months with comparison for preceding year is shown in the following table:

	Tons 1943-44	Tons 1942-43
August	63,862	61,255
September	67,043	59,302
October	69,812	61,534
November	71,057	67,242
December	70,272	69,435
January	65,994	65,698
February	67,747	66,646
March	73,157	73,688
April	62,987	68,503
Totals for 9 months	611,931	593,303

During the current crop year less than 5% of the total production has been going for export while in the preceding year the quantity exported was slightly under 6%. In prewar years large quantities of millfeed were exported from Canada. For instance, in 1938-39 the year immediately preceding the outbreak of hostilities Canadian mills produced 555,515 tons of which 172,120 were exported, or almost 31%. For increased war production of livestock all the millfeed now being produced is needed in home markets and rigid government restriction has reduced exports to the present small percentage of output.

——BREAD IS THE STAFF OF LIFE——

MILL WAREHOUSE BURNS

TORONTO, ONT.—A warehouse belonging to the flour milling firm of William Knechtel & Son, Hanover, Ont., burned recently. The building had a large stock of grain and feeds and loss is estimated at $50,000.

——BREAD IS THE STAFF OF LIFE——

CANADIAN FEED MAKERS TO HEAR BROAD PROGRAM

TORONTO, ONT.—The annual convention of the Canadian Feed Manufacturers Association which is to be held at Ste. Adele, Quebec, on June 21, 22 and 23 is expected to have a large attendance. Every branch of the feeding trade will be covered in the addresses and discussions. Several officials of the Quebec provincial government are included among the speakers. There will also be an address by a representative of the American Feed Manufacturers Association in addition to those delivered by members of the Canadian trade.

Ste. Adele Lodge is one of the newest and largest resorts in the Laurentians and offers a variety of outdoor entertainment as well as the well-known French-Canadian cooking and hospitality. A golfing tournament will be held on June 23 and on the same day a special program has been arranged for the ladies. This will take the form of a discussion on cooking by Miss Laura C. Pepper, chief of consumer section of the Dominion Department of Agriculture, Ottawa.

Representatives of the feed associations of British Columbia, Alberta, Manitoba and Saskatchewan are meeting with the two eastern divisions (Ontario and Quebec) with a view to forming a national organization.

——BREAD IS THE STAFF OF LIFE——

VISITOR IN VANCOUVER

VANCOUVER, B. C.—Rupert C. Reece, head of the grain firm of Earl Stoddart, Ltd., Winnipeg, was a visitor here last week, conferring with the firms' local representative, H. A. Smith.

MILLING EXEMPT FROM EIGHT-HOUR LAW

TORONTO, ONT.—In regard to the new Eight-Hour Day Act the Ontario Flour Millers Association has been advised by the Industry and Labor Board that flour mills are to be exempted from the new regulations. The flour milling industry is considered essential to the war effort and as long as the shortage of man power exists and the demands of war remain acute mills are authorized to continue their usual working hours.

CANADIAN WHEAT RELIEF FOR GREECE IS CONTINUED

TORONTO, ONT.—The Canadian House of Commons has voted $8,500,000 to be used by the government in continuing its shipments of wheat to the civil population of Greece. These are made monthly and distribution in the form of bread is made by International Red Cross.

In asking for this vote of additional funds the minister in charge said that up to May, 1944, Canada had given in this way 11,172,308 bus of wheat to Greece. As a result 3,000,000 Greeks are receiving a bread ration of half a pound per day. Other foods are also available to these starving people but this bread is their mainstay. Starvation was rampant in their country as a result of German looting and a crop failure before these shipments began. Latterly, it has been found possible to increase the monthly distribution through a better supply of shipping space.

As to the certainty of delivery to Greeks and to them alone the minister told the house that there was no doubt about this. The Canadian relief supplies began first to reach Greece in the spring of 1942 and have continued on a monthly basis ever since. It is the intention of the Canadian government to continue these shipments until Greece is delivered from her enemy occupying forces and made secure in regard to food by the UNRRA organization.

——BREAD IS THE STAFF OF LIFE——

ONTARIO FLOUR MILLERS TO HOLD JUNE 19 MEETING

TORONTO, ONT.—The annual convention of the Ontario Flour Millers Association, to be held at the King Edward Hotel, Toronto, on June 19, will open with a luncheon. This association is exceedingly active in its work for the good and welfare of the milling industry of this province and has played an important part in working out the many problems facing the trade under war conditions. It has a large membership amongst the mills of Ontario. The president is F. H. Dunsford, president and general manager of the Great Star Flour Mills, Ltd., St. Mary's, Ont.

——BREAD IS THE STAFF OF LIFE——

ONTARIO FARM INCOME UP

TORONTO, ONT.—Ontario farmers had a cash income of almost $400,000,000 from the sale of farm products in 1943. That was probably the highest income ever attained by farmers of this province. It is about 45% greater than in the best year of the prosperity period and is almost three times as much as in 1932, the worst of the depression years when income was about $123,000,000. Income of Ontario farmers has risen steadily since the beginning of the war. As compared with 1939 income of the farmers of this province has increased by about 80%.

European Food Production Outlook Unfavorable to Axis

WASHINGTON, D. C.—The 1944-45 food outlook in Europe is by no means favorable to the Axis, according to the Department of Agriculture's office of foreign agricultural relations. The cumulative effect over the war years of shortages in agriculture manpower, fertilizers, draft power, farm equipment and machinery, does not augur well for crop production this year. In addition, the impact of military operations on production and transportation activities in general may have a telling effect on supplies of food in 1944-45, the office of foreign agricultural relations said.

Thus far during the war, food consumption on the continent generally, exclusive of Russia, has been maintained at between 85 and 90% of prewar. Most of the farm population and the preferred worker groups probably live at approximately prewar levels. A portion of the non-farm population in some countries benefits substantially from the black market. This, however, does not alter the fact that grave shortages exist in many quarters. Millions of people are being forced to exist on as little as three-fourths, two-thirds, and even less of their prewar living standards.

Up to this time the German people themselves have continued to fare much better with respect to foodstuffs than in World War I, because of expanded output at home supplemented by takings from other Axis and Axis-occupied areas, and to the efficiency of the German food distribution system. The year 1944, however, may mark a decline in the German food supply. Following long-continued fertilizer shortages, manpower difficulties and shortages of draft power, a reduction in production seems probable, unless these factors are offset by unusually favorable weather conditions. In addition, it seems reasonable to assume that takings from other countries will be severely curtailed or eliminated. Mass bombings of transportation and shorage facilities are interfering with the customary distribution of supplies and are necessitating extensive collective feeding and the relaxation of rationing regulations.

In Austria and Czechoslovakia the food situation remains passable, although the food standards of these countries are somewhat lower than in the Reich proper. Food conditions in the "Government General of Poland," on the other hand, are much worse than in any other area occupied by Germany, except Greece.

In liberated Italy, which normally produces less than it consumes, a large part of the population must continue to depend mainly on imported supplies, especially for bread grains, sugar and dairy products. In German-occupied Italy, which includes the chief food producing areas of the country, the situation is likely to continue unsatisfactory because of increasing unrest among farmers and partial disruption of the distribution system.

In France, where imports from North Africa no longer help to offset heavy deliveries to Germany, a 1943 harvest better than that of 1942 prevented a further decline in food supplies. Hoarding and black market operations on a substantial scale still keep rations at much lower levels than are justified by domestic supplies. This results in acute distress to many consumers who are unable to buy in the black market, or to secure food from friends and relatives in the country.

The level of food consumption in Belgium remains very low. Before the war Belgium produced only about half of its food needs, measured on a caloric basis. While efforts to expand production have met with some success, dependence still must be placed on substantial imports from other Axis-controlled areas. In the Netherlands a relatively adequate diet has been maintained by increasing the production of potatoes, grain and oilseeds at the expense of pastures and by utilizing as food large quantities of grain and potatoes formerly used as feed.

The effect of the war on food supplies appears thus far to have been less marked in Denmark than in most of the other European countries under Nazi domination. Because of the lack of imported feedstuffs, livestock numbers and production have been reduced greatly, although significant recoveries took place in 1943 and early 1944. On the other hand, a large share of the crops produced has been utilized for direct consumption. By thus altering its agricultural structure to meet wartime conditions, Denmark has made itself independent of food and feed imports while maintaining fairly substantial exports of livestock products as well as of sugar and fish.

The food situation in Norway continues to be unfavorable to the masses of the population, average consumption being two-thirds and three-fourths of the prewar level. Among that part of the population which does not have access to supplies from other than officially authorized agencies, there is considerable undernourishment. Even with existing small bread rations more than a third of the bread grains must be imported. There is no sugar except that which is imported. Fresh vegetables are scarce, mainly because of requisitions by the Germans. Fresh fish, which also is requisitioned heavily, is often unobtainable except in fishing communities. In Finland and Sweden, conversely, the food situation appears to be somewhat better than it was a year ago.

The Danube Basin is one of the few areas of continental Europe where the 1943 production was definitely larger than that of 1942. The improved situation is attributed mainly to increased production of wheat and rye and to the fact that even in wartime the Balkan peasants continue to plant and harvest their fields about as usual, a good share of the work being done by women and children. As a result, the food situation in Bulgaria, Hungary, Rumania and Yugoslavia, taken as a whole, is more favorable this season than in 1941-42. In Greece, however, the situation remains unsatisfactory, especially in urban centers.

The Spanish food situation continues to be difficult because of relatively low levels of production, limited possibilities of obtaining supplementary supplies from abroad and unsatisfactory internal distribution of available supplies. In Portugal, where rationing was introduced this year, short crops and peasant hoardings have caused a deterioration in the food supply. Although there is no serious deficit in the total food supply of Switzerland, consumption in the cities is considerably below prewar levels.

——BREAD IS THE STAFF OF LIFE——

RETAIL CREDIT TROUBLESOME

TORONTO, ONT.—Grain and feed dealers in various parts of Ontario report a tendency on the part of retail traders to delay payments for the monthly supplies delivered to them. Carelessness is probably the chief reason for this development since most members of the trade are better off than formerly and presumably better able to pay their bills promptly. Those familiar with the question of credits in the feed trade declare that the amount of debts on the books of many wholesale dealers has been increasing for some time, perhaps a year or more. There is no immediate danger of a serious break in prices by which small traders might be caught without the means to liquidate current obligations but overdue debts of this kind are still bad business and should not be allowed to accumulate.

——BREAD IS THE STAFF OF LIFE——

NEWFOUNDLAND FLOUR TRADE ACCEPTS ENRICHED PRODUCT

TORONTO, ONT.—Flour shipments from Canada to Newfoundland switched over on June 1 to a fully enriched grade of the kind and quality used in the United States. Comment from Newfoundland indicates satisfaction with the change. Canadian mills doing business with Newfoundland readily acquiesced in the request for this change. They believe it will increase the demand for Canadian flour in that market. This step on the part of Newfoundland leaves Canada herself as the only market for Canadian flour where enrichment with vitamins is not now in regular and effective use.

PLENTY VOLUME HERE

How's this for volume. It's a trick hearth loaf on display at the recent convention of the Associated Bakers of Min nesota in St. Paul. Alfred V. Munn, left, of the Emporium Bakery, St. Paul, treasurer of the state association, and Ray O'Brien, Standard Brands, Inc., help the author of this Paul Bunyan product arrange it for display.

BARLEY COMMITTEE TO WORK WITH OPA

Group Will Advise on Prices, Production, Milling, Malting and Sales—Represent 10,000 Companies

WASHINGTON, D. C.—A barley industry advisory committee, which will represent approximately 10,000 companies and will aid the Office of Price Administration in any problems connected with ceiling prices, production, milling, malting or sales of barley to ultimate consumers, has been appointed by that pricing agency.

Following are the members of the committee:

R. F. Cunningham, R. F. Cunningham & Co., New York; E. M. Combs, E. M. Combs & Son, Chicago; Benjamin Danforth, Farmers Union Grain Terminal Association, Great Falls, Mont; L. B. Faust, Anheuser-Busch, Inc., St. Louis; A. L. Flanagan, Joseph Schlitz Brewing Co., Milwaukee; R. F. Gunkelman, Farmers Grain Co., Fargo, N. D; E. R. Houlton, Houlton Grain Co., Denver; B. O. Holmquist, Holmquist Elevator Co., Omaha; G. W. Hales, Hales & Hunter Co., Chicago; J. P. Hessburg, Froedtert Grain & Malting Co., Milwaukee; Walter R. McCarthy, Capitol Elevator Co., Duluth, Minn; C. Kurtz, Jr., Kurtz Malting Co., Milwaukee; John R. Murray, Quaker Oats Co., Chicago; Julius Mayer, Continental Grain Co., St. Louis; A. W. Nielsen, Westcentral Co-operative Grain Co., Omaha; K. K. Smith, Kimbell Milling Co., Fort Worth, Texas; E. W. Stuhr, Co-operative G.L.F. Mills, Inc., Buffalo, N. Y; F. J. Seidl, Archer-Daniels-Midland Co., Minneapolis; S. W. Wilder, Wilder Grain Co., Cedar Rapids, Iowa; James L. Young, Simonds-Shields-Theis Grain Co., Kansas City, Mo; S. L. Rice, Rice Grain Co., Metamore, Ohio; A. E. Ladish, Albert Schwill & Co., Chicago; Elwood Williams, Farmers Grain Co-operative, Ogden, Utah.

——BREAD IS THE STAFF OF LIFE——

OATMEAL PRODUCTION INCREASES

TORONTO, ONT.—Production of oatmeal in Canada in April showed a substantial increase as compared with the same month last year. The quantity was 4,948,074 lbs as against 763,188. The output of rolled oats did not change to any great extent. The figure for April was 5,074,925 lbs compared with 5,187,934 in the corresponding month of 1943. Corn flour and meal were other cereals to show larger production in April, output totaling 1,979,366 lbs compared with 1,376,872 in the same month a year ago. Pot and pearl barley production also increased to 341,917 lbs from 304,682 in April, 1943, while the output of buckwheat flour amounted to 35,224 lbs as against 19,188 in April last year.

——BREAD IS THE STAFF OF LIFE——

NON-PRODUCER WHEAT SALES

WINNIPEG, MAN.—Persons who are not producers may deliver wheat and sell it outright to the Canadian Wheat Board, according to instructions to the trade. This is provided for in Order-in-Council P.C. 4130. The price to be paid for this wheat is the board fixed initial price, but no participation certificates are issued covering such deliveries of wheat. A special application form, which is also in the form of an affidavit, is available.

Stuffed Straights

FROM THE MANAGING EDITOR'S SIFTER

By Carroll K. Michener

LOOKING BACKWARD. — One of the best ways to look forward, I am convinced, is to look backward. That, of course, doesn't exactly square with the familiar philosophies of go-gettum. History is a bore to a lot of well-meaning forward-lookers, and on more than one occasion the editorial attitudes and habits of this journal with respect to flour milling history have been questioned as reactionary even by members of its own staff. But there are times when history seems important even to those most occupied with the present and most concerned for the future.

One of those moments of historical importance is the anniversary. Is not one's own birth date perennially significant? How much more so, then, is a notable accumulation of years, whether for the individual or for his corporate creations. America is still young enough for the figure 75 to denote great age. Man's expectation of life has been measured, but less is known of the longevity of corporations. It seems doubtful if companies live as long, on the average, as their creators. A 75-year-old company, therefore, may be considered more remarkable than a septuagenarian man.

This bit of philosophizing brings us, naturally, smack up against the current 75th anniversary celebration of note—that of the Pillsbury Flour Mills Co.

Pillsbury history is voluminous, but it is scattered through public prints, chiefly (if we may be pardoned for muscling in with this thought) in the columns of THE NORTHWESTERN MILLER, which is only four years younger than the Pillsbury enterprise. A seventy-fifth anniversary was required to inspire the effort of digging out this history and collecting it and compacting it for public comprehension. This was one of the most noteworthy of the items in Pillsbury's program for commemorating the diamond jubilee. And it is a pleasure to report that the staff of THE NORTHWESTERN MILLER participated in this big job of recapturing the past and pointing it up as a signboard to the future.

The monthly house organ, Pillsbury People, was used as a medium for reviewing Pillsbury history. To this publication Milton B. Kihlstrum contributed a general story of the enterprise and the careers and personalities of its principals. Martin E. Newell wrote the story of the feed industry and Pillsbury's part in developing it. Paul E. Dittemore outlined the history of modern milling, which has been almost exactly contemporary with Pillsbury history. These men are all members of THE NORTHWESTERN MILLER's editorial staff.

There's lots of good column stuff in the diamond jubilee number of Pillsbury People. For example, the account of how the brand "Pillsbury's Best" came into being. Legends concerning it have been vague. The origin of the name seems clear enough from the tendency of the times to name products after the maker, but there is difficulty over the four X's until it is remembered that for centuries three of them in a row were the symbol of bread, possessing a historical allusion to the crucifixion, each X supposedly standing for one of the crosses on Calvary. This symbol of the three X's, in time, was adopted by medieval millers to refer to the best flour for bread, but use of them in this way had died out long before Pillsbury Flour Mills Co came into being. However, Charles A. Pillsbury had heard the story, and he promptly made capital of it. "If three X's mean the best," he said, "then we'll add another just to show that Pillsbury's Best is really the best." So that's how the XXXX came about. It was incorporated into the dotted circle that was officially registered in 1872.

v v

A bronze statue of former Governor John S. Pillsbury, one of the company's founders, stands on the University of Minnesota campus. It was designed and created by Daniel C. French, one of the foremost sculptors of the last century, and was dedicated in 1900, in honor of Governor Pillsbury's devotion to the institution. He is often referred to as "Father of the University."

v v

Before starting to mill semolina, John S. Pillsbury wanted to learn all about the subject. So he went to Europe. He visited Naples, Palermo and Marseilles, which were important centers of semolina production. Learning that the best machinery for milling semolina was made in Switzerland, he got in touch with a representative of the machinery manufacturer. He visited the mills—saw exactly how the semolina was manufactured—got samples of semolina at each stage of the milling process—got pictures and detailed drawings of all the machinery. Then he came back to this country and went to work with one of the Pillsbury company's most expert millers.

v v

Cornelius O'Donnell, assistant secretary and treasurer of the company: "I can still see C. A. Pillsbury, that's Phil's grandfather, you know, as he would drive up to the old Metropolitan Life Building on winter mornings in his sorrel-drawn cutter, bundled in fur coat and cap. He was one of the finest gentlemen I ever knew."

v v

Alexander Ramsey, former governor of Minnesota and United States senator, watched the first course served at a great civic banquet in Minneapolis in the late 1880's. As the oysters on the half shell were placed in front of him, he turned to his neighbor.

"I am very proud of these," he said, indicating the oysters, "for I first introduced them in the state of Minnesota."

"Indeed," said his neighbor, "then we are both pioneers in a certain respect, for I introduced the electric light in the Northwest." The speaker was Charles A. Pillsbury, founder of the Pillsbury company.

v v

Frederick C. Pillsbury, brother of Charles A., and nephew of John S. Pillsbury, thought there was a better use for bran than spouting it into the tail-race. A young man with a bright, inquiring mind, he purchased a farm and 15 steers for experimental feeding of bran, the first effort of this kind in the Northwest. Charts of the results were kept and later a booklet was circulated throughout the country testifying to the virtues of bran. These experiments led to more extensive studies, one of them involving wintering 4,000 Montana sheep on bran and shorts.

v v

Finally, and very likely the most important item in all this miscellany, emerges the fact that Pillsbury was a pioneer among American mills advertising their products. First general magazine to publish Pillsbury advertising was Scribner's, and first trade journal THE NORTHWESTERN MILLER. *That was in 1883.*

▪ ▪ ▪

. . . Haven't you often wondered why soap should float—if it does float, and undoubtedly a certain variety does. The answer lies in Procter & Gamble's brand new history book commemorating the company's entrance into its second century. This is the story: One day a careless workman permitted the mixing device known as the "crutcher" to run during his lunch hour. This introduced minute air bubbles into the mixture. The resulting soap floated. At first this seemed like a bad error, but the true significance of the accident developed when letters began pouring in with demands for more of the soap that floated. Few of the towns along the Ohio River had filtration plants, it seems. For long periods of the year water was a tawny brown. If you let your bar of soap sink in washbowl or bathtub it was lost to view and you had a slippery hunt on your hands. . . . So that's the story of floating soap. P & G advertising men have, of course, thought up more modern reasons why it's important. But that's an entirely different story.

FLOUR SALES SEMINAR. — The jury in the milling anti-trust trial in Federal Court at Chicago—eight women, preponderantly on the ingenue side, four men and two male alternates—has had a good deal of seminar work to do. There are many thousands of words—possibly hundreds of thousands—in the 127 government exhibits. A lot of home work (in the jury room, of course, supervised by the lady bailiff) may have to be done on these documents, but they've already been given a careful once-over right in the jury box.

A very sleepy afternoon (six of the jurors were having a pretty rugged time keeping awake) was rendered additionally soporific by one of the government attorneys, who intoned the contents of each of a whole hatful of exhibits as he handed them to the end man in the jury theater. Down the line went the documents, in steady progression, until all hands were full. Long before the attorney's chant was done and the document chain was complete a most commendable absorption in the details of invoices and orders, and the various other paper work of flour merchandising, had been observed. The jurors were dismissed, therefore, to the more comfortable quarters of their lounging room, there to continue their study.

This, however, did not please the defense council, which felt that a good deal of whispering might go on in the study room, to the prejudice of justice. The jurors were hurriedly brought back to their gallery, therefore, and continued their studies for upwards of half an hour. They appeared to be reading every word and figure with the greatest of care, the while court, attorneys and defendants squirmed and suspired.

At long last the hour for adjournment came and class was dismissed for the day. Lots of fun.

▪ ▪ ▪

. . . From marching on its stomach in the traditional manner today's army seems to convert its movements into something of a sack race. Cotton bags, according to the National Cotton Council, constitute the largest individual consumer of cotton, with more than a billion and a quarter yards of cotton cloth having been used in bags last year. This figure is expected to increase this year as additional members of the armed services' are transferred to overseas posts. An army of 7,000,000 men, half of whom are overseas, requires 150,000,000 cotton bags annually as food containers alone, according to the council. Last year 87,000,000 bags were required for flour, 11,000,000 for beans and peas, and similar quantities for sugar, potatoes and meal.

Marsh & McLennan
INCORPORATED
Chicago New York
Minneapolis

Transportation
Insurance on Flour
Against All Risks

Correspondents in American and Foreign Ports

The Standard Others Strive to Reach
WHITE SWAN
FLOUR
SPRINGFIELD MILLING CORPORATION
MINNEAPOLIS • MINNESOTA

"Sweet Cream"
"Very Best"
Quality Flours
W. J. JENNISON CO.
MINNEAPOLIS, MINN.

MERIDIAN FLOUR
NEWTON MILLING & ELEVATOR CO.
Newton, Kansas
Sales Office—2010 Taney Avenue
NORTH KANSAS CITY, MO.

STANDARD MILLING COMPANY
Millers of
•CERESOTA •ARISTOS
BAKERY FLOURS

WE ARE LARGE BUYERS
of PURIFIED MIDDLINGS
and PURIFIED WHEAT GERM
We will be glad to get your quotations
The Cream of Wheat Corporation
Minneapolis, Minnesota

THE WALNUT CREEK MILLING CO.
Millers of Fine, Country-Milled
Kansas Wheat Flours
Since 1877
GREAT BEND, KANSAS

KING MIDAS FLOUR
KING MIDAS FLOUR MILLS
Minneapolis, U. S. A.

Western Canada Visible Grain Supply

Visible supply of grain in the western inspection division June 9, 1944, and receipts and shipments during the past week, in bushels (000's omitted):

Fort William and Port Arthur—	Wheat	Durum	Oats	Barley
Semi-public terminals	22,899	1,239	6,406	7,532
Private terminals	..	..	44	2
Totals	22,899	1,239	6,450	7,534
Vancouver-New Westminster	13,860	..	173	43
Int. public and semi-public elevators	10,728	..	119	558
Churchill	1,878	..	..	..
Prince Rupert	1,209	..	..	..
Victoria	1	..	..	..
Totals	50,575	1,239	6,742	8,135
Year ago	107,506	1,167	5,110	..
Receipts during week—				
Ft. Wm.-Pt. Ar.	8,548	152	2,377	882
All other public and semi-public terminals, western div.	388	..	36	24
Totals	8,936	152	2,413	905
Shipments during week—				
Ft. Wm.-Pt. Arthur—				
Lake	4,389	..	2,994	1,023
Rail	49	..	273	42
All other public and semi-public terminals, western div.	247	..	45	29
Totals	4,685	..	3,312	1,095
TOTAL RECEIPTS Aug. 1, 1943, to June 9, 1944				
Ft. Wm.-Pt. Ar.	207,307	4,778	57,049	42,721
All other public and semi-public terminals, western div.	17,574	..	2,222	1,590
TOTAL SHIPMENTS Aug. 1, 1943, to June 9, 1944				
Ft. Wm.-Pt. Ar.	239,886	4,936	60,596	42,832
All other public and semi-public terminals, western div.	27,752	..	2,062	1,299

United States Grain Stocks

Commercial stocks of grain in store and afloat at the principal markets of the United States at the close of the week ending June 3, 1944, and June 5, 1943, as reported to the United States Bureau of Agricultural Economics, in bus (000's omitted):

	American		Canadian in bond	
	June 3 1944	June 5 1943	June 3 1944	June 5 1943
Wheat	95,638	169,790	8,835	7,611
Corn	7,697	20,265	...	...
Oats	8,031	8,584	870	2,036
Rye	21,635	22,699	1,267	868
Barley	8,948	9,463	40	1,201
Flaxseed	2,844	852	54	218

Stocks of United States grain in store in Canadian markets June 3 (figures for corresponding date a year ago given in parentheses): wheat 2,149,000 (none) bus; corn, 585,000 (2,397,000); oats, none (none); rye none (24,000).

Bonded Grain in the United States

Bonded grain in the United States June 10, in bushels (000's omitted):

	Wheat	Oats	Rye	Barley
Baltimore	2,354	..	..	..
Boston	17	..	..	..
Buffalo	387	595	713	..
Afloat	208	353	271	66
Chicago	191	..	44	..
Duluth	..	..	..	13
Fort Worth	751	..	..	..
Lakes	912	629	..	..
New York	1,298	..	..	..
Afloat	106	..	..	..
Philadelphia	574	..	..	..
Totals	6,798	1,577	1,028	79
June 3, 1944	6,498	1,746	555	558
June 12, 1943	6,665	1,784	111	986

Rye Flour Output

Following is the rye flour output reported to The Northwestern Miller by mills at Chicago, Minneapolis and outside points in the Northwest, in sacks, with comparative figures for the previous weeks:

	Week ending May 20	May 27	June 3	June 10
Five mills	28,149	31,073	26,902	*30,416

*Four mills.

Millfeed Receipts and Shipments

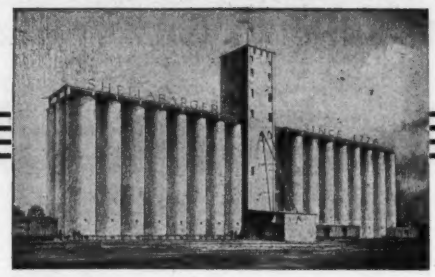
Receipts and shipments of millfeed at the principal distributing centers for the week ending June 10, in tons, with comparisons:

	Receipts 1944	Receipts 1943	Shipments 1944	Shipments 1943
Minneapolis	...	...	21,780	16,200
Kansas City	175	1,175	3,525	4,675
Milwaukee	30	40	3,930	3,230
Philadelphia	160	240	...	...

FLOUR TRADE CONVENTIONS

June 15-16.—National Macaroni Manufacturers Association, 1944 war conference at Hotel New Yorker, New York, N. Y; secretary, M. J. Donna, P. O. Drawer 1, Braidwood, Ill.

June 21.—Pennsylvania Millers and Feed Dealers Association, spring meeting at Penn Harris Hotel, Harrisburg, Pa; president Horace Menchey, P. O. Box 54, Lancaster, Pa.



OVERLOOKING and LOOKING OVER THE KANSAS WHEAT CROP

This fine elevator and its family of smaller houses is today overlooking the fine Kansas crop, prepared to store it out here for you when you want it. When the wheat moves, it will be *looked over* in the Shellabarger laboratory and at every Shellabarger station. We will report its character to you.

At no extra cost to you.

SHELLABARGER MILLS
3,500,000 Bushels Country Storage
SALINA, KANSAS

MATHEW C. BELAN . . . *Milling Consultant*
Successful record of milling every type of grain in all parts of the country
5041 Gladstone Avenue Minneapolis 9, Minnesota

ACME RYE
A HIGH QUALITY
WISCONSIN RYE FLOUR
All Grades
FISHER-FALLGATTER MILLING CO.
WAUPACA WISCONSIN

VANITY FAIR
TELEPHONE
MARITIME
INVADER
(HIGLUTEN)
"MASTER MILLED"
Spring Wheat Flour
CANNON VALLEY MILLING COMPANY
Chamber of Commerce · Minneapolis

"CREMO"
Just the Cream of Hard Wheat
CROOKSTON MILLING CO.
CROOKSTON, MINN.

"Whitewater Flour"
Ground Where the Best Wheat Is Grown
WHITEWATER FLOUR MILLS CO.
Whitewater, Kansas

"DURAMBER"
SEMOLINA
FANCY No. 1
Milled from Carefully Selected
AMBER DURUM WHEAT
AMBER MILLING CO.
MINNEAPOLIS
Cable Address: "AMBERMILCO"

THE ROSS MILLING CO.
Choice Quality Flour
Plain and Selfrising
OTTAWA KANSAS

A Real Gem in Flour
KANSAS DIAMOND
Made by
Arkansas City Flour Mills Co.
Arkansas City, Kansas
Daily Capacity 2,000 bbls

BLAIR'S Certified FLOUR FEEDS
BLAIR MILLING CO., Atchison, Kans.

Uniform Flour Export Trade Terms

Washington, D. C.—The Flour Millers Export Association has announced the uniform flour export trade terms agreed upon at the recent annual meeting of the organization. William T. McArthur, general manager of the association, states the new schedule is to become effective not later than July 1, 1944. The schedule is as follows (this is a revision and correction of the table which appeared in The Northwestern Miller of June 7):

(ALL IN CENTS PER CENTAL)

Country	Maximum Commission	Basic Terms	Optional Terms	Premium	Discount
Bolivia	10c	Cash or irrevocable credit before shipment	Sight Draft D. P. (not recommended)	10c	
Brazil	10c	Sight Draft (D. P.)	Cash New York		5c
Colombia	10c	Sight Draft (D. P.)	Cash New York		5c
Costa Rica	10c	Sight Draft (D. P.)	Cash New York		5c
Cuba	10c	Sight Draft or 60- or 90-day bank credit or cash New York	45 days date (D. A.)	5c	
Dom. Republic	10c	Sight Draft (D. P.)	Cash New York		2½c
Ecuador	10c	Sight Draft (D. P.)	Cash New York		5c
El Salvador	10c	Sight Draft (D. P.)	Cash New York		5c
Guatemala	10c	Sight Draft (D. P.)	Cash New York		7c
			45 days date (D. A.)	5c	
Haiti	10c	Sight Draft (D. P.)	Cash New York		5c
			45 days date (D. A.)	5c	
Honduras	10c	Sight Draft (D. P.)	Cash New York		5c
			45 days date (D. A.)	5c	
Nicaragua	10c	Sight Draft (D. P.)	Cash New York		5c
Panama	10c	Sight Draft (D. P.)	Cash New York		5c
			45 days date (D. A.)	5c	
Peru	10c	Sight Draft (D. P.)	Cash New York		10c
Venezuela	10c	15 days date or first presentation except Ciudad Bolivar and Caripito	Cash New York		5c
			60 days date (D. A.)	7½c	
		25 days date or first presentation in Ciudad Bolivar and Caripito	Cash New York		5c
			60 days date (D. A.)	7½c	

"D. A." means "documents against acceptance."
"D. P." means "documents against payment."
"Shipment" always means "from seaboard."

In some markets "Cash New York" terms are not feasible (at present Brazil and Ecuador) but these optional terms are indicated in case situation changes.

"Cash New York" means payment in hand by mill or sight draft New York credit opened before shipment clears from seaboard. If cash or bank credit not received before shipment, mill will draw sight draft (documents attached) at price applying to sight draft terms.

CENTRAL FEED RETAILERS STUDY POSTWAR MERCHANDISING

Importance of Feed Merchant Emphasized at Annual Milwaukee Convention — Fred H. Pittelkow Renamed President

MILWAUKEE, WIS.—Fred H. Pittelkow, of the H. P. Schmidt Milling Co., Oshkosh, Wis., was re-elected president of the Central Retail Feed Association at the concluding session of the two-day annual convention of the group held at Milwaukee, June 5 and 6.

Also re-elected was B. J. Logan, Westby (Wis.) Feed & Seed Co., secretary-treasurer, with David K. Steenbergh, executive secretary, being reappointed. James Keegan, Keegan Bros., Richland Center, Wis., was elected vice president to succeed Paul Gebert, Jr., Lincoln Mills, Merrill, Wis.

Directors named for three-year terms were Frank Albright, Athens (Wis.) Co-operative; Roland C. Tesch, Knauf & Tesch, Chilton, and J. Orrin Anderson, Edgerton (Wis.) Farmer Warehouse, to succeed Mr. Gebert, Elmer J. Debroux, of Valders, and W. J. Borst, Brooklyn, Wis.

Importance of the retail feed dealer in the war effort, and to the feed industry as a whole, was stressed by speakers addressing the two-day war conference, which attracted more than 1,000 feed dealers and salesmen from Wisconsin and surrounding states.

"The feed retailer is the heart beat of the entire feed industry," Walter N. Jones, vice president of Vitality Mills, Chicago, commented in reviewing convention proceedings as the final speaker of the convention. "The researcher may find new things, the feed manufacturer can make them and place them on the market, but the ultimate success of these developments lies in the hands of the retailer, because it is the retailer who is the salesman that must sell the farmer on such products before they can attain general use and popularity," Mr. Jones pointed out.

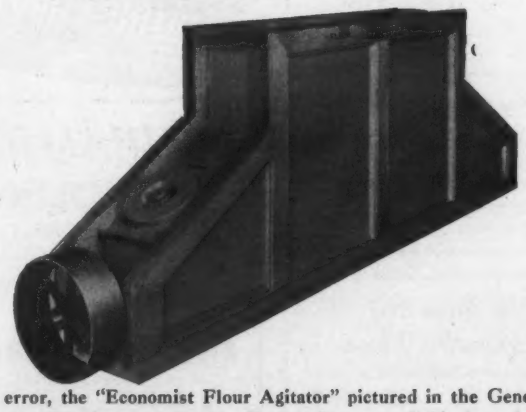
The entire feed industry was complimented for its efforts during the war years by Senator Hugh A. Butler, Omaha, Neb. He pointed out that the feed industry was among the top ranking industries in the United States, and that it should strive to continue in the high position it has gained through the development of quality feeds that have aided the war effort through increased production of food.

Conservation of feed was one of the principal topics of discussion during the convention. Larry Wherry, vice chairman of the Feed Industry Council, said that while much has been done to conserve feed supplies during the past 18 months much remains to be done.

The need for feed conservation was also stressed in the talk by Walter C. Berger, chief of the feed management branch, War Food Administration, in which he covered the livestock reduction program necessary to balance the feed situation.

Meeting Tuesday morning of the convention was the Salesmen's Club of Wisconsin, which, during the annual "eye opener" breakfast starting at 8 a.m. re-elected George LaBudde, president; Paul Nelson, Eau Claire Seed & Feed Co., secretary, and Siebert Jensen, Allied Mills, treasurer. About 100 salesmen attended the breakfast.

The Economist Flour Agitator



By error, the "Economist Flour Agitator" pictured in the General Mill Equipment advertisement on page 11a, section two, of this issue is not the new agitator manufactured by that company. The old machine, as shown, is similar to the new one, but a new set of bearings and other refinements distinguish the new product. Run in an early printing form, the advertisement was already on the press when the error was noted. Above is a picture of the modern version of that machine.

MILLFEED MARKETS

Minneapolis: No increase in offerings; jobbers pick up occasional split car of bran, midds. and clears, but no straight cars of millfeed; inquiry not as urgent as it was, with pasturage good, but still far in excess of production.

Oklahoma City: Good demand for millfeeds with scant supplies. Prices unchanged. Southern deliveries: bran, mill run and shorts $1.90@1.95 bag of 100 lbs. For northern deliveries: bran, mill run and shorts $1.85@1.90.

Wichita: Supply far below demand; (basis Kansas City) $36.50.

Hutchinson: Demand active; trend firm; supply inadequate; bran, mill run, gray shorts $36.50@37.50 (Kansas City basis).

Salina: Demand extremely good, trend steady; supply insufficient. Ceiling prices continue to prevail.

Fort Worth: Supply inadequate; situation tight as ever. Practically no car lot offerings. Production going in mixed cars with flour. Wheat bran and gray shorts $43.20, in mixed cars, del. TCP or group 3.

Chicago: No offerings; all grades $40.40, jobbers' ceiling price.

Toledo: In spite of any relief from pasturage feeding and relaxation of demand, available supply of millfeed not sufficient to meet requirements. Ceiling levels prevail.

Buffalo: Despite a backing away from high-priced feeds, demand for wheat feeds still persists due to comparatively lower price value; supplies still far below requirements of trade; trend firm; supply very light; all varieties $41.55.

New York: Supply tight; $46.06.

Boston: Offerings light; far from adequate to satisfy demand. While feeders are relying more and more on pasturage, other feed users, unable to cover needs of other grains, turned to millfeeds so that there was no decrease in demand. Spring bran, midds., mixed feed, red dog $46.17.

Philadelphia: Demand moderate; trend firm; supply light; std., pure spring and hard winter bran $45.34; soft winter, nominal; std. midds., flour midds. and red dog $45.34.

Pittsburgh: Situation far from satisfactory. Slight relief in oats via Canadian ports last week. Corn and barley entirely absent from market with no relief in sight. When available, ceiling prices prevail on southwestern and northwestern bran, middlings and shorts $44.10@44.60.

Atlanta: Situation shows but little change from tightness that has marked it for past few months, but demand less urgent on account of improved pastures and liquidation of livestock; offerings small and readily taken; moderate amounts arriving on allocations to mixed feed mills and dealers; bran and gray shorts firm at ceilings of $46.30@46.80, ground feed wheat $52.50, ground oats $78@78.50, ground barley $77.80.

Nashville: Demand still exceeds supply. Few offerings. Farmers and dairymen aided a little by fair pastures, feeding any kind of feedstuff available. Bran and shorts $43.30@44.30.

Seattle: Supply limited; $36.50.

Portland: Mill run, bran, midds., shorts $36.50 ton.

Ogden: Trade brisk, millfeed moving, plants working to capacity, seven days per week. Mills booked into July with more cars moving in June. Prices stationary. Red bran and mill run, blended, white, midds. $36.30, carload lots, f.o.b., Ogden. Denver prices (ceiling): red bran and mill run, blended, white, midds. $38 ton, ceiling. California prices (ceiling): red bran and mill run, blended, white, midds. $42.08, car lots, f.o.b., San Francisco, Cal., with Los Angeles prices up $1 ceiling.

Toronto-Montreal: Demand keeping up well, mills could sell more than they are producing. Scarcity of feeding grains and relative cheapness at ceiling prices has stimulated sales of millfeed. Exports less than 5% of production. Quotations: domestic ceiling, bran $29, shorts $30, midds. $33 ton, net cash terms, bags included, mixed or straight cars, Montreal freight basis.

Winnipeg: Demand excellent; supplies still short of requirements, stocks moving freely. Quotations: bran $28, shorts $29, Man. and Sask; Alberta bran $25.50, shorts $26.50; small lots ex-country elevators and warehouses $3 extra.

Vancouver: Trend steady. Supplies somewhat tight, especially for June shipment from western mills, due to big feeding program in east. Western mills continue to operate beyond safety point due to heavy government flour orders. Domestic demand heavy, but down from recent peak. Stocks in dealers' hands fair. Prices firm at ceiling levels, cash car quotations: bran $29.80, shorts $30.80, midds. $33.80.

RYE PRODUCTS

Minneapolis and interior Minnesota: Inquiry more general than for some time, sales satisfactory; trade shows more tendency to anticipate needs, but as yet not buying far ahead; prices lower; pure white rye flour $2.98@3.08 cwt., in cottons, f.o.b. Minneapolis, pure medium $2.88@2.98, pure dark $2.69@2.73.

Philadelphia: Market soft and irregular; prices show loss of about 5c per 100 lbs. Buyers indifferent; offerings more liberal with general pressure to sell; white patent $3.10@3.25.

Portland: Pure dark rye $3.72, medium dark rye $3.77; Wisconsin white patent $4.37; Wisconsin pure straight $4.20.

Chicago: Improvement continues. Although buying not general, a fair amount of business done. Directions fair, white patent $3.05@3.18, medium $2.95@3.08, dark $2.60@2.90.

Buffalo: Demand fair; trend steady; supply ample; white $3.45, medium $3.35, dark $2.95.

New York: Reduced prices brought only limited business; pure white patents $3@3.25.

St. Louis: Prices 18c off. Sales fair, shipping directions slow; pure white $3.41, medium $3.31, dark $2.86, rye meal $3.16.

Pittsburgh: Rye flour has fallen still further. Sales few, inquiry light. Waiting attitude very prevalent, even at lower prices. Rye flour, fancy white $3.25@3.30; medium grade rye $3.15@3.20.

CORRECTION

Through an error of transmission, a mistake was made in the text of Amendment 3 to Revised MPR 296, the flour price ceiling, which was published on page 30 of THE NORTHWESTERN MILLER of May 31. In item 5, which gave the text of Appendix A III (a) (ii) covering the revised prices of soft wheat flour milled in the states of California, Nevada, Utah, Idaho (south of the southern boundary of Idaho county), Colorado, Arizona and New Mexico, the correct maximum price for cake flour should have been printed as $3.90 cwt, plus the charge at the lowest flat carload rail rate from Ogden, Utah, to destination.

LA GRANGE FLOURS . . .

whether plain or enriched, remain the same high standard, dependable flours that have characterized the products of La Grange Mills over the half century and more of their operation.

This quality pattern is not an accident but the result of painstaking care in wheat selection and careful milling.

☆

You can depend on LA GRANGE FLOURS

☆

LA GRANGE MILLS RED WING MINNESOTA

"KELLY'S FAMOUS" FLOUR

IS . . .

KANSAS' FAMOUS FLOUR

★ ★ ★ ★ ★ ★

THE WM. KELLY MILLING CO.

Capacity 2,500 Barrels HUTCHINSON, KANSAS

For Over Fifty Years...

KING'S GOLD
KING'S BEST
GOLD MINE
EXCELSIOR

Minnesota makes the Best Flour in the World.

...Made in Minnesota

H. H. King Flour Mills Company
MINNEAPOLIS, MINNESOTA

SPRING WHEAT FLOURS

RED WING SPECIAL
BIXOTA
CREAM *of* WEST

PRODUCE BREADS WITH TASTE APPEAL

THE RED WING MILLING CO.
RED WING, MINNESOTA

Wheat Washed with Our Own Artesian Well Water.
Flour Tested and Baked in Our Own Laboratory.

"SUPERFLOUR"
"BUFFALO"

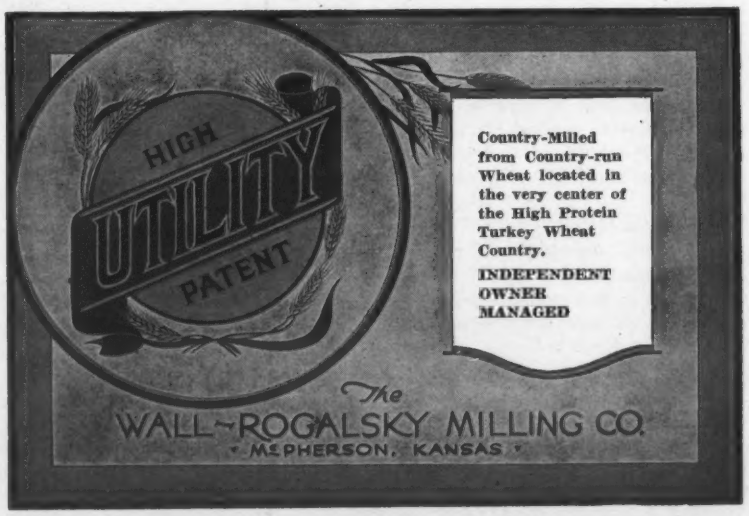
Tops in Bakery Flours

★ ★

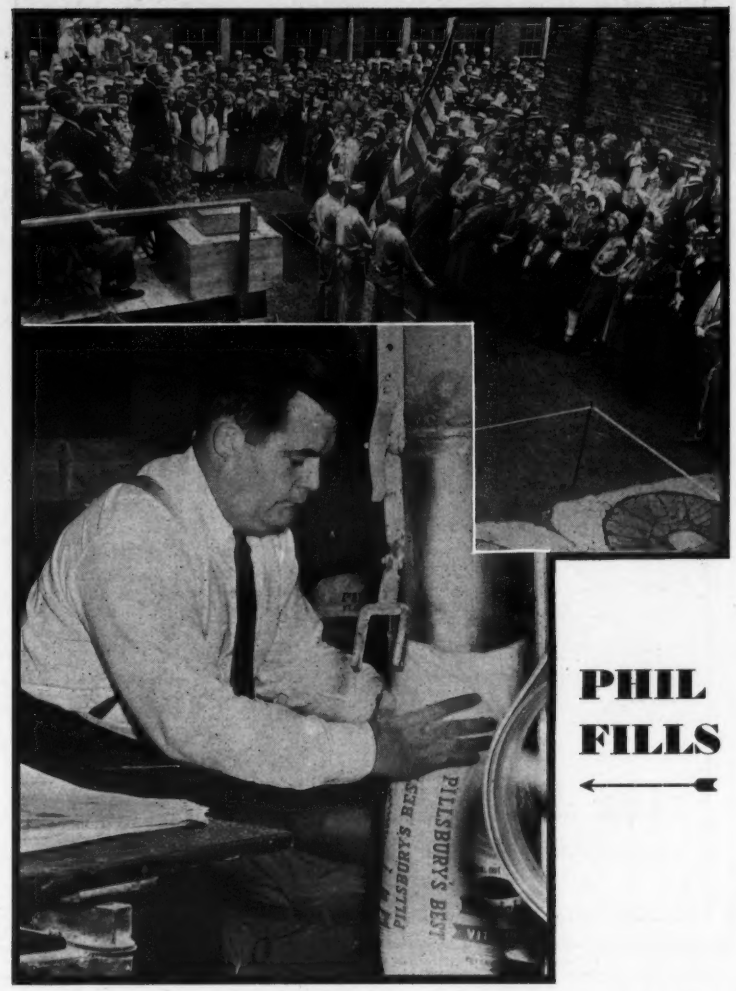
THE WILLIS NORTON CO.

Quality Millers Since 1879

Capacity 1,500 Bbls. WICHITA, KANSAS



★ CEREMONIES MARK ANNIVERSARY ★



PHIL FILLS ←

Edward J. Thye, governor of Minnesota, is shown in the upper picture accepting a pair of historic millstones presented to the Minnesota State Historical Society by the Pillsbury Flour Mills Co. on the occasion of the seventy-fifth anniversary of the founding of the concern. The millstones had been embedded in cement in a pavement at the famous old "A" mill since 1912. The picture shows the speakers' stand and part of the crowd which attended ceremonies commemorating the event at the mill June 5. On the stand is shown a box which was buried and sealed containing current newspapers, trade publications and other documents, and which will be reopened in 1969 when the one-hundredth anniversary of the firm will be celebrated. In the lower picture, Philip W. Pillsbury, president of the company, is shown sacking souvenir bags of flour which were presented to dignitaries attending the ceremonies.

Mostly Personal

IN KANSAS CITY

J. F. Hall, formerly in the milling business in Kansas and at one time with Hall Milling Co., St. Louis, visited Kansas City last week. He now is a flour broker with headquarters in Detroit and he owns a farm in Indiana, where he spends part of his time. A son, Jack Hall, is head feed buyer for Montgomery Ward & Co. in Chicago.

AT CONVENTION

Paul Ross, American Flours, Inc., Newton, Kansas, was one of the mill owners and managers who attended the Association of Operative Millers convention in St. Louis last week.

IN NASHVILLE

D. F. Johnson, sales manager for Arnold Milling Co., Sterling, Kansas; Ferris Pickerell, manager Clyde (Kansas) Milling & Elevator Co., and James Abel, Chattanooga, Tenn., Lawrenceburg Roller Mills Division of Acme-Evans Co., Indianapolis, Ind., visited in Nashville last week.

BACK HOME

A. C. Strong, Oklahoma City, of the southwestern division of General Mills, Inc., sales department, has returned from a trade trip through Texas. Lee Merry, of the sales division, visited the trade in Arkansas.

BUSINESS TRIP

J. H. Blake, New York flour broker, visited the Chicago office of THE NORTHWESTERN MILLER last week. He was returning from a business trip to mill connections in Kansas and Minnesota.

FISHING HONORS

Honors for the first man-sized rockfish of the season in Virginia went this year to S. F. Poindexter, secretary of the Piedmont Millers Association and a veteran rockfish man. While casting in the Mattaponi River on June 1, Mr. Poindexter hooked an 18-pounder.

RECUPERATING

Joseph E. Dixon, Nashville sales office of Victor Chemical Works, is recuperating from a recent major operation. He hopes to be able to go home soon.

AT THE MILL

C. D. Eblen, representative of the William Kelly Milling Co., Hutchinson, Kansas, in Kentucky and West Virginia, spent a few days at the mill and looking over the wheat fields.

IN CHICAGO

Joseph H. Weaver, of the Nebraska Consolidated Mills Co., Omaha, has been in Chicago for a week.

BRIEF VACATION

Halsey B. O'Brien, of N. T. Swezey's Son & Co., Inc., New York flour jobber, has taken a brief vacation in Providence, R. I.

VACATION OVER

Herman K. Schafer, of the Maney Milling Co., Omaha, has returned to Omaha after a prolonged vacation in Oklahoma and the Southwest.

KANSAS CALLERS

R. K. Harvey, broker from El Paso, Texas, visited the offices of the Larabee Flour Mills Co., Kansas City, last week, and F. M. Martinson, Jackson, Miss., broker, dropped in this week for a preharvest chat.

KANSAS CITY VISIT

Frank Tully, of the Minneapolis office of A. & P., visited friends in Kansas City early this week.

VISITING

John Rathbone, sales manager for Kansas Milling Company, visited Kansas City last week. He called on friends in the industry and then visited his mother before returning to Wichita.

AT HEADQUARTERS

A. B. Alford, manager of the Detroit office of the Commander-Larabee Milling Co., spent a few days at headquarters in Minneapolis last week.

RECUPERATING

Joseph F. Schroeder, president of the North East Feed Mill Co., Minneapolis, who had an operation a little over a week ago, left the hospital June 12, and will spend a week or two at his summer home near Big Lake, Minn., recuperating.

BOARD MEMBER

James Norris, Chicago, president of the Norris Grain Co., was recently elected a member of the Duluth Board of Trade and the firm given corporate membership in the association. Office quarters for the company have been prepared at 202-203 Board of Trade Building. C. C. Blair, Duluth, will be in charge of the local office.

CONTEST WINNERS

Three district sales managers for Omar, Inc., mill division, were presented with war bond prices and scrolls for their outstanding sales records at a meeting of all the company's district sales managers recently. Winners of the new account contest were A. M. Bearhs, Chicago district; H. W. Winther, Denver district, and R. L. Voelz, Des Moines district. The conference was held May 25-27 at Hotel Fontenelle, Omaha.

PURCHASE MEMBERSHIPS

E. N. Johnson, president Hallock (Minn.) Co-operative Farmers Elevator Co., and Vern D. Duncanson, of the L. V. Duncanson Elevator Co., Mott, N. D., have purchased memberships in the Minneapolis Chamber of Commerce.

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WITH THE ARMED SERVICES

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Mrs. Martha Dobson Cannon, daughter of Allen Dobson, of the Dobson-Hicks Grain & Seed Co., Nashville, Tenn., and Mrs. Dobson, has been notified by the War Department that her husband, 2nd Lt. Edward Cannon, III, aged 28, was killed in action over the European area on April 20. He previously had been reported missing in action over France since that date. Lt. Cannon was the father of two daughters. A bombardier with the Eighth Army Air Forces, he had been stationed in England since the latter part of last December. He was a graduate of Duke University where he was a member of the Kappa Alpha fraternity.

★

On the day that Elton Kile, Kileville, Ohio, retired as president of the Ohio Grain, Mill and Feed Dealers Association, he received word that his son, 1st Lt. James S. Kile, 27, had been wounded on the Anzio beachhead on May 22. He was attached to a field artillery unit and suffered a wound from a mortar shell fragment. Lt. Kile was a graduate of Ohio State University and was associated with his father in the grain and feed business at Kileville before entering the service in May, 1941.

★ 50-YEAR AWARD ★

Alfred F. Pillsbury, a former treasurer of the Pillsbury Flour Mills Co. and now a director, is shown being presented with a 50-years-of-service pin from his nephew, Philip W. Pillsbury, president of the company. The presentation took place at a recent luncheon celebrating the 75th anniversary of the founding of the Pillsbury company.

NEBRASKA GRAIN DEALERS ACCEPT REGULATIONS AS WAR MEASURE

Speakers at Sixteenth Annual Convention Agree That Government Restrictions Should Be Considered Necessary as Dealer's Part in War Effort

OMAHA, NEB.—Government restrictions placed on grain dealers should be considered necessary as the dealer's part in the war effort, most speakers at the Nebraska Grain & Feed Dealers Association's sixteenth annual convention June 8-9 at Omaha agreed.

Ray Watson, Cherny & Watson Co., North Bend, was re-elected president of the association. Vice president Charles Deaver, Colton, was also re-elected. Directors named for three-year terms were George Neuswanger, Alliance; W. A. Swanson, Wayne and Ray Ingall, Kearney.

Secretary Phil Runion, Lincoln, disclosed the board of directors had decided to engage a field man who would go out personally and speak to the dealers, discussing their problems with them and trying to help them in any way possible. "From personal experience we have found that in no other way can a member be better served than through personal calls at his place of business," he explained.

Chris Miller, sales manager for Sargent & Co., Des Moines, told the dealers they must expect less profit in the future if they want to stay in business. "We already have evidence that the margin of profit will be smaller," Mr. Miller asserted.

"Right now, dealers are selling more mixed feeds than ever before. The main reason for this is that many feeders of livestock and poultry really believe they can afford to feed mixed feeds only when the profit is large enough. A feeder is first interested in what mixed feeds will do for him and secondly, how much will it cost to do the job?

"If we can prove to our livestock and poultry producers that a small investment in feedstuffs that they do not raise on the farm will save enough grain to more than pay for the outside investment and also keep the stock in better health so they go to market in less time, we can hold them as our customers.

"The feed business can only prosper in relation to the degree of prosperity of the producers. We must assume the responsibility of rendering dependable service to the men in the feed lot. That is the only way we can merit their business."

Frank Theis, president of Simonds-Shields-Theis Grain Co., Kansas City, and vice chairman of the National Grain Trade Council, said the industry has been faced with four major crises. First in 1914, when prices soared; then in 1929 when the prices reached the bottom, it seemed; in 1932, with the advent of the New Deal and during 1938 when the war started. Mr. Theis, who was head of the wheat marketing section of the Agricultural Adjustment Agency for 18 months, discussed the problems that came with each of these events or eras.

Two seventy-five-year-old organizations exchanged congratulations June 5 as they observed anniversary events. In this picture Philip W. Pillsbury, president of the Pillsbury Flour Mills Co., Minneapolis, talked by telephone with Arthur Hays Sulzberger, president of the New York Times, and member of the board of the Chattanooga Times, and with Charles Puckette, general manager of the Chattanooga paper. Listening to the conversation are, right, John S. Pillsbury, chairman of the board of the Pillsbury company, and on the left is his son, Lt. John S. Pillsbury, Jr. Mr. Pillsbury received the telephone call at a luncheon of business and civic leaders who were observing the Pillsbury birthday. Mr. Sulzberger and Mr. Puckette talked from a luncheon in Chattanooga. Both organizations were founded in 1869. The Pillsbury company sent a cake to the Chattanooga paper.

OHIO GRAIN AND FEED DEALERS TOLD OF IMPENDING FEED CRISIS

Walter C. Berger Sounds Only Optimistic Note at Sixty-Fifth Annual Convention of Ohio Group—Austin W. Carpenter Foresees Crisis Within 60 Days

COLUMBUS, OHIO.—Members of the Ohio Grain, Mill and Feed Dealers Association, at their sixty-fifth annual convention in Columbus June 7-8, were told that within 45 to 60 days the crisis will be reached in the feeds situation in this country. This warning, given by several men vitally interested in the trade, was in open conflict with a statement made by Walter C. Berger, chief of the feed and livestock branch of the War Food Administration, that no starvation threatens.

Inroads of the government in business and favoritism toward co-operatives through the exemption of taxes were denounced and the association adopted a resolution to this effect, after declaring that the organization "recognizes the inequality in certain taxes on business."

Speaking on the feed supply outlook in his address "Today's Feed Problems," Walter C. Berger sounded an optimistic note.

"Let us analyze the available feed supply in final form," he said. "We had on hand to use during the crop year October, 1943, to October, 1944, 145,900,000 tons, providing we have a carryover of only 8,700,000 tons. Now then, if these adjustments do take place, as harsh as the adjustments may seem in some places and in some areas, figured on average yield and May 1 acreage estimates, we will have 130,600,000 tons of feed concentrates on hand for the next feeding year from Oct. 1, 1944, to Oct. 1, 1945,—approximately 15,000,000 tons less than will be used this year, but 25,000,000 tons more than the average used during the five-year basing period from 1937 to 1942.

"Theoretically, there is no starvation in sight. We can still produce approximately 20% more than during the basing period and all we need is a good orderly adjustment of our livestock in accordance with our available feed supply."

Taking the opposite view of the situation was Austin W. Carpenter, executive director of the Eastern Federation of Feed Merchants, who led the open forum discussion on "Livestock and Poultry in Relation to Grain and Feed Supplies."

"Yesterday," said Mr. Carpenter, "Mr. Berger declared that there is no prospect of our reaching a starvation situation. I do not agree with him, because based on stocks per animal unit our grain has been disappearing on a national basis at the following rates:

"Oct. 1, 1943, 12% less than previous year; Jan. 1, 1944, 19% less than last year; April 1, 1944, 24% less than last year; May 1, 1944, 26% less than last year.

H. E. Frederick, Marysville, was elected president of the association at the concluding business session. L. A. Gilliland was elected vice president, C. R. Phelps, second vice president, and W. W. Cummings, secretary treasurer.

——BREAD IS THE STAFF OF LIFE——

2 Flour Orders For Puerto Rico

WASHINGTON, D. C.—Washburn Crosby Co. of Buffalo, N. Y. sold 4,000,000 lbs of hard wheat patent enriched flour for Puerto Rican account at $3.48 per sack f.o.b. Buffalo, packed in 100-lb sacks, compressed. The Commander-Larabee Milling Co., Minneapolis, Minn., sold for the same account 2,000,000 lbs of hard wheat clear enriched flour at $3.30 per sack f.o.b. Buffalo. War Food Administration was the purchaser.

Telegraphic acceptances have been issued to vendors under announcements 98 and 99, accepting approximately 14,000,000 lbs of flour also for Puerto Rico. There was one vendor under announcement 98 whose offer was accepted for 600,000 lbs of soft wheat flour. Under announcement 99 three vendors offered 8,850,000 lbs of hard wheat patent enriched flour with five vendors selling 4,450,000 lbs of hard wheat clear enriched flour. Details of prices and names of companies completing these transactions were not available immediately.

THIRD "E" AWARD

★ ★ ★

Rodney Milling Co. Becomes Three Time Winner of Army-Navy Honor

KANSAS CITY, MO.—Rodney Milling Co., Kansas City, became a three-time winner of the coveted Army-Navy "E" production award this week, the first flour milling company so honored.

The company first won distinction by receiving the award for "high achievement in the production of war materiel" on April 3, 1943. The first white star was added to its flag Nov. 6 of that year, recognition of a continuing good job. This second star awarded the company was a renewal of that recognition.

Each award has been accompanied by a letter from Robert P. Patterson, Undersecretary of War. This letter, written June 10 and addressed to "The Men and Women of the Kansas City Plant, Rodney Milling Company," is as follows:

> I am pleased to inform you that you have won for the third time the Army-Navy Production Award for high achievement in the production of war materiel.
>
> In maintaining the fine record which first brought you distinction, you have set an inspiring example for your fellow Americans on the production front.
>
> This second renewal adds a second White Star to your Army-Navy Production Award flag, and stands as a symbol of your great and continuing contribution to the cause of freedom.
>
> (Signed) ROBERT P. PATTERSON,
> Undersecretary of War.

Otto Bresky is president of the company, and L. S. Myers is vice president and general manager. Mr. Bresky lives in Boston.

MARKETS IN DETAIL

U. S. FLOUR MARKETS

THE SOUTHWEST

Kansas City: After an exciting week high-spotted by the red hot subsidy market May 31, selling has become slow and colorless, buyers probably waiting for end of June with prospects of again becoming eager buyers if they sense a lower subsidy for July. With a gradually softening wheat market, buyers took only 41% of capacity of southwestern mills last week, compared with 246% previous week and 60% year ago.

Fortified with bigger backlogs in most cases, and uncertainty about wheat values of new crop, millers not eager sellers and, like buyers, prefer to await developments.

A few large and many small buyers still fishing for information and ideas, just as millers are fishing in wheat market with bids below market in order to test it out, but real on-the-market trading has not begun.

Family business still disappointing except for somewhat synthetic demand from mixed car buyer. Clears still hard to move. Export shipments good but buying uncertain. Mexican business promises to take some of edge of high ash stuffed straights and clears, but may not reach volume to cause any significant market change.

Quotations June 10: established brands of family flour $3.80@3.90, bakers short patent $3.15, standard patent $3.10, straight grade $3.05, first clears $2.45@2.65, second clears $2.40@2.55, low grade $2.35@2.50.

Five mills report domestic business active, 7 fair, 2 quiet, 4 slow and 12 dull.

Oklahoma City: Sales slumped averaging 56% compared to 88% previous week and 48% year ago. Bakers took 70% of bookings, family buyers 30%. Operation averaged 70% compared to 60 previous week, and 70 year ago. Prices stable and unchanged. Quotations June 10: hard wheat short patent flour $4.10@4.66, soft wheat short patent $4.10@4.66, standard patent $4@4.46, bakers short patent $3.75, bakers standard $3.65.

Omaha: Market very quiet, sales dropping to about 20% of capacity after rush of sales in previous week. Declining wheat market and cash wheat selling off ceiling keeping all buyers out of market except those buying hand-to-mouth. Shipping directions slow. Flour prices slightly lower. Quotations June 10: family short patent $3.47@3.99, standard patent $3.38@3.45, bakery short patents $3.32@3.45, high protein clear $3.05@3.15, fancy first clears $2.70@3.00, low grade clears $2.50@2.70.

Wichita: Mills operating from 60 to 100%, directions from about 100%, sales slow.

Hutchinson: Stagnation grips trade; few inquiries; new business limited to few small lots. Shipping directions also tight; diminished operations threatened.

Salina: Demand slow; very little business being consummated. Shipping directions quite satisfactory.

Texas: Business back to old dull routine. Sales consist almost entirely of family to regular customers, amounting to only 15 or 20% to possibly 25% in capacity. Baker trade absent; Mexico again inquiring for flour but apparently no business consummated in that direction. Operations continue at usual rate. Some mills running about capacity, others 75 to 80%. Prices unchanged to steady. Quotations June 9: family flour, extra high patent 50's $4.10@4.30, high patent $3.85@$4.05, bakers flour, old wheat, ceiling $3.51, new crop basis 10c@15c less; first clears 100's $3.15@3.30, del. TCP or Galveston domestic rate.

THE NORTHWEST

Minneapolis: Very little buying done since announcement of decrease in subsidy. Interest at low ebb. Price situation little more satisfactory. Before subsidy reduction, sales made 18c cwt under ceiling. When reduction was announced, prices on high gluten flours reacted to ceiling basis, quotations generally around 10c under. Top clears 25@30c under.

Estimates of bumper crop, weakness in wheat, not conducive to buying, so trade generally holding off. Bulk of buyers covered for July. Spring wheat mills last week sold around 37% of capacity, compared with 235% a week earlier, and 42% year ago. Some companies report shipping directions good; others poor to fair.

Exporting millers report fair sales recently to Cuba and Mexico, but little elsewhere.

Quotations: June 13: established brands family flour, enriched $4.10@4.50, high gluten bakery flours $3.54, bakery short patent $3.44, first patent $3.44, standard patent $3.34, fancy clear $3.34, first clear $3.14@3.24, second clear $2.70@2.90, whole wheat $3.54.

Interior mills, including Duluth: No new business; nearby needs covered, trade waiting for market to settle; directions hard to get; keen demand for millfeed.

THE CENTRAL WEST

Chicago: Market quiet; and only usual steady small lot buying reported. Interest subsided; buying spotted. Shipping directions fair. Family demand continues quiet; deliveries slow. Quotations June 10: spring top patent $3.42@3.57, standard patent $3.32@3.47, first clear $3.10@3.35, second clear $2, family flour $4.51; hard winter short patent $3.42@3.57, 95% patent $3.32@3.47, first clear $2.95@3.35, soft winter short patent $4.06@4.72, standard patent $3.50@4.31, first clear $3.25@3.60.

St. Louis: A couple of round lots sold, otherwise very little doing. Car lot orders few and far between for family and baker trade. Shipment up to 90 days. Demand for clears eased off. Prices steady to easier. Jobbing trade reports business very light with an occasional order. Specifications sharply higher. Quotations June 10: soft wheat baker patent (ceiling price) $3.98, cake flour $4.58, straight $3.74, family soft wheat short patent $4.29, straight and 95% $4.29, first clear $3.32@3.75; hard wheat baker patent (ceiling price) $3.53, family short patent $3.68@3.94, straight and 95% $3.43, first clear $2.68@3.06; spring wheat baker short patent $3.53, straight $3.43.

Toledo: Soft wheat millers did not participate particularly in flurry of flour buying at end of May. Soft wheat flour sales so free from any excitement or stimulation for so long and new crop now so near at hand, that millers not expecting any change until its arrival. Prospect and outlook then with indicated promise of good crop of soft wheat, much better than year ago.

EASTERN STATES

Buffalo: When lower subsidy basis raised flour selling price, and implications arising from that development took hold in trade, it resulted in considerable buying. Demand lasted only about two days but during that period a fair volume of new contracts signed. Demand and sales have drifted back to routine and into doldrums which prevailed during recent weeks. Trade still has considerable orders on mill books; no urgent necessity to stock up. Selling largely confined to filling out stocks and meeting nearby requirements. Foreign trade light. Dip in production continues tight situation from supply point of view in market for by-products. Directions only fair.

Quotations June 10: spring first patent $3.80, spring standard patent $3.70, spring first clear $3.20, hard winter short patent $3.80, hard winter 95% patent $3.70, hard winter first clear $3.25, soft winter short patent $3.92, soft winter first clear $3.72.

New York: Sales lacking. Flurry before new subsidies took care of all current needs; trade completely disinterested in any buying. Mills not pressing for business results in complete stagnation all classes of trade. Buyers turned very bearish; many millers feel same way. Since no bids from buyers, communication between brokers and principals light. Many unable to report on up-to-date prices, simply quote ceilings. Cake flours from east practically nonexistent; little activity from other territories. Clears continue spotty with considerable firmness where mills have few to offer.

Quotations June 10: spring high glutens $3.80@3.95, standard patent $3.60@3.75, clears $3.40@3.66; southwestern high glutens $3.72@3.85, standard patents $3.68@3.75, clears $3.20@3.40; soft winters, Pacific coast $3.72@3.77, Pennsylvanias $3.95@4.

Boston: Quiet prevails after last week's moderate volume. Trade still looking to new crop prospects, convinced fuller movement will have a bearish effect on cash wheat market. Almost no buyer in immediate need of flour and in present attitude mill agents not disposed to exert selling pressure. Usual commitments from those operating on a hand-to-mouth basis with a few fill-in lots ordered. Spring and hard winter types account for small total in equal proportions. Softer rye market and lower ceilings for soft winter types from eastern and midwest sources produce no important business. Family types not moving. Directions on old contracts coming in steadily. Mill quotations firm. Quotations June 10: spring high gluten $3.98@4.02, short patent $3.88@3.90, standard patent $3.78@3.80, first clears $3.68@3.70; southwestern short patent $3.88@3.90, standard patent $3.78@3.80; Texas short patent $3.88@3.90, standard patent $3.78@3.80; soft winter patent $4.15@4.20, straights $4.05@4.10, clear $3.95@4.

Philadelphia: Not much snap to demand; no important change in prices. Many buyers awaiting effect upon prices of winter wheat movement, now starting in early districts. Most bakers have fairly good backlogs; little in action of markets recently to encourage any increase in commitments. Considerable discussion regarding effect of invasion on backlog of government orders. It is believed that fairly sizeable quantities probably still remained to be ordered out against purchases made late last year and first few months of this year. Mills not pressing for business and quite some variance in ideas of buyers and sellers. Sales generally confined to odd lots for immediate needs. Quotations June 10: spring wheat short patent $3.68@3.78, standard patent $3.65@3.73, first spring clear $3.45@3.53; hard winter short patent $3.68@3.78, 95% $3.65@3.73; soft winter straight, nearby $3.45@3.55.

Pittsburgh: Apathy prevails in market. Sales flurry followed by lull. Prices of high protein grades near ceiling levels on spring wheat. Hard wheat prices 10c cwt. under ceilings on inferior grades of flour not infrequent. Spring wheat inquiry better than seasonal. Shipping directions lagging. Mixed car sales including clears up a trifle. Clears firmer.

Quotations June 10: hard winter bakers short patent $3.70@3.80, straight $3.60@3.70, high gluten $3.80@3.90, first clear $3.40@3.70, Pacific coast $3.63; spring wheat bakers short patent $3.75@3.80, standard patent $3.65@3.70, high gluten straight $3.85@3.90, first clear $3.60@3.70; soft winter bakers short patent $4.45@4.60, intermediate $3.85@3.92, straight $3.60@3.69.

THE SOUTH

New Orleans: Trade slow after slight flurry which followed new subsidy boost. Prices unchanged for most part, shipping directions continue to hold up well. Volume of business in northern spring wheat type relatively small in comparison with southwestern hard wheat flours, no general activity noted. Pacific coast and midwestern soft wheat flours experience very little activity and, in general, remain on an even keel.

Quotations June 10: hard spring wheat family patent $3.64, first patent $3.44, standard patent $3.34, fancy clear $3.30, first clear $3.25, second clear $3.15; hard winter wheat family patent $3.75, bakers short patent $3.60, 95% $3.50, first clear $3.30; soft wheat short patent $4.25@4.45, straight $3.90@4.15, first clear $3.55@3.70.

Atlanta: After sharp increase in sales last of May, bakery flour business has returned to former dull state; few scattered sales of limited fill-in business, volume small. Mills quoting prices as much as 22c under ceiling as feeler for market. Almost all bakers covered for many weeks ahead. Shipping directions fair. Quietness rules family flour business, buyers not interested in adding to commitments. Most jobbers and wholesale grocers concerned with cleaning out stocks of old flour.

Quotations June 10: spring wheat bakers short patent $3.85@4.02, standard patent $3.78@3.88, straight $3.70@3.85, first bakers clear $3.60@3.75; hard winter bakers short patent $3.70@3.80, standard patent $3.70@3.75, straight $3.65@3.75; family short patent $4.75@5.10, fancy patent $4.35@4.75, special patent $4.15@4.25, low protein 95% $3.75@3.95; soft wheat 95% $3.84@4.04;

GRAIN FUTURES—CLOSING PRICES

Closing prices of grain futures at leading option markets, in cents per bushel:

WHEAT

	Minneapolis		Chicago		Kansas City		Seattle		Duluth	
	July	Sept.	July	Sept.	July	Sept.	July	Dec.	July	Sept.
June 7	158	153⅛	160⅜	158	153½	151¾	....	143⅛	156⅝	156¼
June 8	157¼	153½	159½	157⅝	152⅝	151	....	143¼	156¼	156¼
June 9	156⅜	153⅛	160¼	158	152⅝	151¼	....	143¼	156	156
June 10	156	152⅛	158¼	156½	151¼	150	....	143¼	154⅜	154⅜
June 12	153½	151⅛	156⅞	155⅝	149⅜	149⅛	....	....	154	154
June 13	154⅞	152⅝	158	157¾	151⅞	151	....	....	154	155

	CORN						OATS			
	Minneapolis		Chicago		Kansas City		Chicago		Minneapolis	
	July	Sept.	July	Sept.	July	Sept.	July	Sept.	July	Sept.
June 7	....	....	....	....	....	....	74¼	69¼	75⅝	69½
June 8	....	....	....	....	....	....	74¼	69	75¼	68¾
June 9	....	....	....	....	....	....	74⅝	69⅛	75	68¾
June 10	....	....	....	....	....	....	74¼	68⅝	75	68⅝
June 12	....	....	....	....	....	....	74¼	68⅛	75	68½
June 13	....	....	....	....	....	....	75	69⅜	75¼	69½

	RYE				FLAXSEED				BARLEY
	Chicago		Minneapolis		Minneapolis		Duluth		Minneapolis
	July	Sept.	July	Sept.	July	Sept.	July	Sept.	July	Sept.
June 7	106¼	106⅞	105½	104⅝	304	305	304	305	....	....
June 8	105⅛	105⅝	104¾	103⅞	304	305	304	305	....	....
June 9	104⅞	105⅛	104¼	103⅜	304	305	304	305	....	....
June 10	105⅝	105½	105⅛	103¾	304	305	304	305	....	....
June 12	105⅞	105⅞	105⅛	103¾	304	304½	304	305	....	....
June 13	107¾	108⅛	107¾	106⅜	303½	304½	304	305	....	....

SUMMARY OF MILLFEED QUOTATIONS

Week-end millfeed quotations, summarized from the market reviews, are based on carload lots, prompt delivery, per ton, packed in 100-lb sacks, f.o.b. at indicated points.

	Chicago	Minneapolis	Kansas City	St. Louis	Buffalo
Spring bran	$....@40.40	$....@37.75	$....@....	$....@....	$....@41.55
Hard winter bran	....@40.40	....@....	36.50@37.00	38.97@39.47	....@....
Standard middlings*	....@40.40	....@37.75	....@....	38.97@39.47	....@41.55
Flour middlings†	....@40.40	....@37.75	36.50@37.00	38.97@39.47	....@41.55
Red dog	....@40.40	....@37.75	....@....	....@39.47	....@41.55

	Baltimore	Philadelphia	Boston	Cincinnati	Nashville
Spring bran	$....@....	$....@45.34	$....@46.17	$....@....	$....@....
Hard winter bran	....@....	....@45.34	....@....	....@....	....@....
Soft winter bran	....@....	....@....	....@....	....@....	43.30@44.30
Standard middlings*	....@....	....@45.34	....@46.17	....@....	....@....
Flour middlings†	....@....	....@45.34	....@46.17	....@....	43.30@44.30
Red dog	....@....	....@45.34	....@46.17	....@....	....@....

	Spring bran	Shorts	Middlings
Toronto	$....@29.00	$....@30.00	$....@33.00
¶Winnipeg	....@28.00	....@29.00	....@....

*Brown shorts. †Gray shorts. ¶Fort William basis.

A SUMMARY OF FLOUR QUOTATIONS IN LEADING MARKETS

Week-end flour quotations, per sack (cwt), packed in 100 lbs. (Canadian quotations per bbl of 196 lbs.) All quotations on basis of carload lots, prompt delivery.

	Chicago	Minneapolis	Kansas City	St. Louis	Buffalo	New York	Baltimore	Philadelphia	Boston	Cincinnati	†Nashville
Spring first patent	$3.42@ 3.57	$....@ 3.44	$....@....	$....@ 3.53	$....@ 3.80	$3.80@ 3.75	$....@....	$3.68@ 3.78	$3.88@ 3.90	$....@....	$....@....
Spring standard patent	3.32@ 3.47	....@ 3.34	....@....	....@ 3.43	....@ 3.70	3.60@ 3.75	....@....	3.65@ 3.73	3.78@ 3.80	....@....	....@....
Spring first clear	3.10@ 3.35	3.14@ 3.24	....@....	....@....	....@ 3.20	3.40@ 3.65	....@....	3.45@ 3.53	3.68@ 3.70	....@....	....@....
Hard winter short patent	3.42@ 3.57	....@....	....@ 3.15	....@ 3.53	....@ 3.80	3.72@ 3.85	....@....	3.68@ 3.78	3.88@ 3.90	....@....	3.70@ 3.77
Hard winter 95% patent	3.32@ 3.47	....@....	....@ 3.10	....@ 3.43	....@ 3.70	3.68@ 3.75	....@....	3.65@ 3.73	3.78@ 3.80	....@....	....@....
Hard winter first clear	2.95@ 3.35	....@....	2.45@ 2.65	2.68@ 3.06	....@ 3.25	3.20@ 3.40	....@....	....@....	....@....	....@....	....@....
Soft winter short patent	4.06@ 4.72	....@....	....@....	....@ 3.98	....@ 3.92	3.72@ 4.00	....@....	....@....	4.15@ 4.20	....@....	5.05@ 5.15
Soft winter straight	3.50@ 4.31	....@....	....@....	....@ 3.74	....@....	....@....	*....@....	*3.45@ 3.55	4.05@ 4.10	....@....	4.70@ 4.85
Soft winter first clear	3.25@ 3.60	....@....	....@....	3.32@ 3.75	....@ 3.72	....@....	....@....	....@....	3.95@ 4.00	....@....	4.50@ 4.65
Rye flour, white	3.05@ 3.18	2.98@ 3.08	....@....	....@ 3.41	....@ 3.45	3.00@ 3.25	....@....	3.10@ 3.25	....@....	....@....	....@....
Rye flour, dark	2.60@ 2.90	2.69@ 2.73	....@....	....@ 2.86	....@ 2.95	....@....	....@....	....@....	....@....	....@....	....@....

	Seattle (98's)	S. Francisco	Standard patent—	Seattle	San Francisco
Family patent	....$....@....	$....@....	Dakota	$....@....	$....@....
Pastry	....@....	....@....	Montana	....@....	....@....

	Toronto	**Winnipeg
Spring top patent¶	$....@5.05	$....@5.30
Spring second patent¶	....@4.40	....@4.80
Spring first clear¶	....@3.30	....@....

	Toronto	**Winnipeg
Spring exports‡	$9.40	....
Ontario 90% patents‡	$5.50@5.60	....

*Includes near-by straights. †Nashville prices basis f.o.b. Ohio River points for soft winter wheat flour. **In cottons, Fort William basis. ‡Second-hand jutes. ¶98-lb jutes. §280-lb cottons.

straight $3.79@3.89, fancy cut-off $3.49@3.59, short patent $4.62@4.89, soft wheat family short patent $4.49@4.79.

Nashville: Sales limited to occasional car hard and soft wheat short patents for reasonably prompt shipment. Buyers waiting new crop movement developments before booking ahead. Advance from 10 to 15c on hard wheat and decline of same amount in soft wheat flours, based on June subsidy, created more interest in soft wheat. Sales for previous month had been confined almost entirely to hard wheat flour.

Blenders' outbound shipments slow. Bakers report a few new purchases of special grades; one larger baker reports a 90-day requirement purchase of spring wheat bakers. Sales of bakery products continue good. Shortage of labor and other conditions very acute with bakers.

Prices unchanged from a week ago. Quotations June 10: soft winter wheat short patent family flour $5.05@5.15, standard patent $4.95@5.05, straight $4.70@4.85, clears $4.50@4.65; hard winter wheat bakers short patent $3.70@3.77, soft winter high patent pastry flour $4.95@5.10.

PACIFIC COAST

Seattle: Markets unchanged; no new business being reported. Buyers protected up to new crop; show little interest in new crop. Mills not pressing new crop sales as they consider it too speculative until new wheat starts moving to terminals and prices established. Government withdrew its recent request for offerings and it is hoped old contracts will be cleaned up.

Portland: Little new Army-Navy business last week, comprising bulk of trade done by mills of Pacific Northwest. Buyers not in mood to book, with weakness shown in present wheat markets. Excellent condition of crop indicates there may be some soft spots in flour market. Mills grinding on old bookings at fair rate. No new lend-lease bookings, and a lot of old still not ordered out by government.

Quotations June 10: all Montanas $3.67, high gluten $3.62, blue stem topping $3.40, cake $3.91, pastry $3.08, pie $3.08, fancy hard wheat clears $3.46, whole wheat 100% $3.49, graham $3.15, cracked wheat $3.15.

CANADIAN MARKETS

Toronto-Montreal: Spring wheat flour business in domestic market active. Steady demand with mills shipping out regular quantities. Sales of mutual aid flour to West Indies continue, mills have substantial business of this kind on books. No new British buying, capacity of mills covered on this account until end of August. Domestic prices at ceiling levels, controlled price exists for flour exported to United Kingdom. Quotations June 10: domestic, top patents $5.05 bbl, seconds $4.40, bakers $4.30, in 98's cotton, mixed cars, track, Toronto-Montreal freights, add 10c extra where cartage is performed. For export, government regulation flour $9.40 per 280 lbs, f.a.s., winter ports, July-August seaboard.

Winter wheat flour trade at low point on account of scarcity of supplies. Limited quantities on market occasionally. Output during current season less than one-third of previous year. Wheat for grinding not available. Quotations June 10: $5.50@5.60 bbl for pure Ontario winters, in secondhand jutes, Montreal freights.

Winter wheat scarcer than ever. Farm stocks about cleaned up, little or none finding its way to market. Ceiling prices prevail. Quotations June 10: $1.12@1.14 bu, f.o.b., shipping points, according to freights.

Winnipeg: No indication of export business in Canadian flour last week, but domestic trade remains good, supplies moving freely into consumptive channels. Quotations June 10: top patent springs for delivery between Fort William and British Columbia boundary, $5.30, cottons; seconds $4.80; second patent to bakers $4.60.

Vancouver: Continued ability of western distributors to secure full requirements of domestic hard wheat flour explained by reports that flour mills in western Canada continue to receive such large government contracts that mills are operating not only at full capacity but in some cases beyond safety point.

Stocks in dealers' hands sufficient for immediate needs, concern about future if present war demand continues. Demand from large bakers continues heavy, store sales still on light side. Prices firm at ceiling levels, cash car quotations for 98's cottons $5.40 for top patents, $5 for bakers or second patents and $4.90 for Vitamin B grinds. Practically no soft wheat flour available, no new supplies expected until September.

SEMOLINA MARKETS

Minneapolis: Market unseasonably quiet, with directions light, trade decidedly uninterested in making new commitments; durum, both cash and futures, has weakened, semolinas quoted 10@15c cwt. under ceilings, with no takers.

In the week ended June 10, eight Northwest companies made 128,345 sacks durum products against 127,137, made by nine companies, in the previous week.

Buffalo: Demand increased; sales slightly up with some ceilings discounted about 5@8c. No general rush to buy. Shipping directions fair. Macaroni plant operation on seasonal basis; trend firm; supply ample; No. 1 $3.98; durum fancy patent $3.98; macaroni flour $3.75; first clear $2.96.

St. Louis: Prices steady. Sales and shipping directions slow; first grade semolina (ceiling price) $3.99, granular $3.84, No. 3 $3.73, fancy patent $3.99.

Philadelphia: Little activity in trade; offerings ample. Prices without important change; No. 1 fancy $4.03; No. 1 regular $3.93.

Pittsburgh: Few sales. Spread of 10c cwt not unusual on quotations given. Few bakers tempted to buy even with cuts. Durum semolina, No. 1 fancy white $3.88@3.98; secondary grade $3.78@3.88.

Chicago: Only scattered small sales. Buyers continue to show a little interest. Directions fair; No. 1 semolina $3.65@3.75, standard No. 1 $3.55@3.65.

OATMEAL MARKETS

Toronto-Montreal: Rolled oats and oatmeal in light demand. Prices at ceiling. Quotations June 10: rolled oats $3.15 bag of 80 lbs, cotton, in mixed cars; oatmeal, in 98-lb jutes, $3.85 bag, f.o.b., Toronto or Montreal.

Winnipeg: Rolled oats and oatmeal in poor demand. Stocks moderate. Quotations June 10: rolled oats, in 80-lb sacks $3.25 in three prairie provinces; oatmeal, in 98-lb sacks, 20% over rolled oats.

Minneapolis: Rolled oats were quoted on June 12 at $6.30 per 100 lbs, bulk; 20-oz packages $2.59 case, 48-oz packages $2.82.

Flaxseed Receipts, Shipments and Stocks

Receipt, shipments and stocks of flaxseed at principal primary points for the week ended June 10, in thousand bushels, with comparisons.

	Receipts		Shipments		Stocks	
	1944	1943	1944	1943	1944	1943
Minneapolis ..	167	131	45	30	724	295
Duluth	36	70	84	195	1,232	566

WANT ADS

Advertisements in this department are 5c per word; minimum charge, $1. (Count six words for signature.) Situation Wanted advertisements will be accepted for 2½c per word, 50c minimum. Display Want Ads $4 per inch per insertion. All Want Ads cash with order.

HELP WANTED

REPRESENTATIVE WANTED—CAR LOT and l.c.l. bakery flour salesman wanted for territory in and around Boston. Address Hubbard Milling Co., Mankato, Minn.

WANTED — ASSISTANT CEREAL CHEMist, $175 per month, 40-hour week. Mention education and experience. Address 6812, The Northwestern Miller, 612 Board of Trade Bldg., Kansas City 6, Mo.

SALESMAN FOR PASTRY, CAKE AND specialty flours in New England. Resident with good following among buyers preferred. State qualifications and training. Address 6794, The Northwestern Miller, Minneapolis 2, Minn.

ENGINEER TO TAKE CHARGE OF ENgine and boiler room department in electrified flour mill. Good location in Middle West. Advise age, nationality, experience, salary and other particulars. Address 6796, The Northwestern Miller, Minneapolis 2, Minn.

MAN WITH SECOND MILLER EXPERIence or with sufficient milling experience to handle that position; excellent working and living conditions, overtime, group insurance and fine advancement possibilities. This is an active mill in war or peace, so the position is secure for the right man. Address 6797, The Northwestern Miller, Kansas City 6, Mo.

CAPABLE, EXPERIENCED EASTERN DIvision sales manager to take care of presently established business and to extend sales of Kansas, spring, cake, pastry and cracker flours to bakers; also family flours and packaged cake, pancake and buckwheat pancake flours and farina under both mill and private label to the grocery trade in Pennsylvania, New York, Maryland, Delaware, New Jersey and the New England states. A capable sales force consisting of both salaried salesmen and brokers of long time standing is already functioning in this territory. This might also prove an exceptional opportunity with increased pay and advancement for sales manager or assistant sales manager now employed. The man wanted must be capable of direct selling over the telephone and promoting sales through the established sales force. Write qualifications. Address Valier & Spies Milling Co., 5020 Shreve Avenue, St. Louis 15, Mo.

SITUATIONS WANTED

SALESMAN, WHO IS CAPABLE AND willing to work, desires connection with flour mill who can offer permanent position if satisfactory. Address 6807, The Northwestern Miller, Minneapolis 2, Minn.

MACHINERY FOR SALE

ROLLER MILLS, SIFTERS, REELS, DUST collectors, grain separators, bucket elevators, screw conveyors. Richardson Grain Machinery Co., 1901 N. 2nd St., Minneapolis 11, Minn.

ALLIS ROLLS 9-30 TYPE A, UNIVERSAL boulders, purifiers Nordyke, Allis-Gray centrifugal reels, Niagara separators, elevator legs, dust collectors steel and cloth, Niagara aspirators, steel conveyors, Draver feeders, steel legs, 24-in. packers, invincible Nordyke-Howe. Motors 25 cycle. Other equipment for 1,000 bbl mill. List furnished. Address W. McGuire, 912 Humboldt, Buffalo 11, N. Y.

ONE ONLY—HOWES EUREKA MILLING Grain Separator, Style A No. 436, 60 bus per hour capacity. This machine is in excellent shape, ideal for use in small mill, elevator or farm. Bargain priced for quick sale, $150. One only—Scroll Mill, $15. Two only—Vertical perfect flour agitators, $20 each. Ideal for use with chlorine gas. Two only—Chlorine bubble type control apparatus, $15. One only—Flour packer, ideal for small mill, $35. This equipment is in perfectly good condition and can be shipped immediately. Consumers' Co-Operative Mills Limited, Outlook, Sask., Canada.

BUSINESS OPPORTUNITIES

MILL FOR SALE OR RENT—WILL SELL or rent building complete with all flour and feed machinery, or sell all machinery without building. Three story brick and steel constructed building has outside 5,000 bu steel storage bin and 1,000 bu wood and corrugated metal bin. Building is served by private RR. siding and driveway. Flour mill is 75 barrel Barnard & Leas. Feed mill is three pair high Sprout, Waldron & Co. corn mill and 26-in. Unique ball bearing attrition mill. Steam engine and 50 h.p. Erie City boiler operate mill. Automatic scales and other equipment included. Mill is old established and operating business. Properties may be inspected and owner, G. W. Brown, contacted at Williamsburg, Pa.

MACHINERY WANTED

WANTED—BRIGHTWOOD BOX MACHINE —Pneumatic scale packaging machine; two flour blenders. Address 4970, The Northwestern Miller, Minneapolis 2, Minn.

Milling Executives

Is your bookkeeping work spread out over the month or is the load accumulated to the end of the month when everybody is busiest? Are your operating statements ready by the fourth working day of the new month? They can be, maybe earlier. Ask us.

Write for full information.

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DAILY CAPACITY 2,100 BARRELS

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—A very fine, short, strong patent milled in one of the West's very finest flour mills.
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NEWTON, KANSAS

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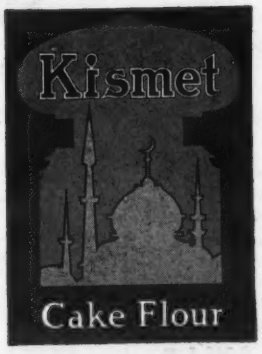
CHEMICAL ANALYSES ★ TEST BAKES
PRODUCT RESEARCH ★ VITAMIN ASSAYS
LABORATORY AND RESEARCH DIVISION
THE W. E. LONG COMPANY
155 N. Clark Street Chicago 3, Illinois

DOWN THRU THE YEARS...
for 3 generations...

For the future, too, GOLDEN LOAF will always be the big value in uniform, strong, fine spring wheat flours.

"Golden Loaf" FLOUR
TENNANT & HOYT COMPANY
LAKE CITY, MINNESOTA

FOR BAKERS



Quality Cake Flour of the Best
NOBLESVILLE MILLING COMPANY
INDIANAPOLIS, INDIANA

WISCONSIN RYE FLOUR
Of Uniform and Highest Quality Made From Wisconsin Grown Rye
White Heather Blue Ribbon Rye Meal
Milled by exclusive rye millers to satisfy the demands of the most critical bakers
GLOBE MILLING CO.
WATERTOWN, WIS.
"WISCONSIN MAKES THE BEST RYE FLOUR"

STALEY'S
CORN MEAL
GRAIN PRODUCTS
ANIMAL and
POULTRY FEEDS
Manufactured by
STALEY MILLING CO.
KANSAS CITY 16, MO.
(42-38)

The Rodney Milling Co.
13,000 CWTS CAPACITY
KANSAS CITY, MISSOURI
"Heart of America" FLOUR
CHICAGO OFFICE:
Kelly Flour Co., 919 N. Michigan Ave.
BOSTON OFFICE:
Seaboard Allied Milling Corporation
1209 Statler Bldg.

Cable Address "RAYBAR"
TIDEWATER GRAIN COMPANY
Receivers - Shippers - Exporters
Export and Domestic Forwarders
Members all leading Exchanges
Established 1927
Bourse Building PHILADELPHIA 6, PA.
Chamber of Commerce BALTIMORE 2, MD.

LUCKY GLUTEN FLOUR
Prompt Delivery
Uniform High Quality
FEDERAL MILL, Inc.
Lockport, N. Y.

New Mill Completed 1936
"SLOGAN"
A Modernized Flour for the Baker
CANADIAN MILL & ELEVATOR CO.
El Reno, Okla.

"Sasnak Flour"
For Discriminating Eastern Buyers
ENNS MILLING CO., Inman, Kan.

PAGE'S FLOURS
THE THOMAS PAGE MILL CO.
Topeka, Kansas

ARNOLD
...of...
STERLING
Mills and Sells
"Thoro-Bread"
(Diastatically Balanced)
A very fine, strong, altogether uniform and dependable flour
ARNOLD MILLING CO.
STERLING, KANSAS

IT'S BIN AGED
Flour from this mill comes to you fully aged — ready to use
ATKINSON MILLING CO.
MINNEAPOLIS, MINNESOTA

"Gooch's Best"
SUPERIOR QUALITY
to Make All Baked Things Better
Gooch Milling & Elevator Co.
Lincoln, Nebraska

Two of the Nation's Finest Flours
"AMERICAN EAGLE"
"THE ADMIRAL"
The H. D. LEE FLOUR MILLS CO.
Salina, Kansas

Western King Flour
Uniform Bakery Flour
MANEY MILLING CO.
Omaha, Neb.

TRIPLE XXX FINE GROUND
ALFALFA MEAL
Ideal for Poultry Mashes
THE DENVER ALFALFA MILLING & PRODUCTS CO.
Lamar, Colo.
Merchants Exchange, St. Louis, Mo.

UNIFORM QUALITY FLOURS
PLAIN AND SELF-RISING
Low cost laboratory controlled mill grinding all types of wheat
Pancake Flour—Cake Flour—Farina—Whole Wheat Products—Prepared Biscuit Flour
CHELSEA MILLING CO., Chelsea, Mich.

Cotton Council Asks Industrial Users to Salvage Bags

MEMPHIS, TENN.—The National Cotton Council has appealed to all industrial and wholesaler users of cotton bags to salvage bags undamaged, once they have been emptied, and return them intact to packers for refilling. At the same time the council announced plans for a comprehensive program to encourage consumers to make cotton bags coming into their homes do double wartime duty as a conservation measure.

Pointing to the unprecedented demands being made upon manufacturers of cotton bags by the war, the council said it was essential that every yard of cotton cloth be used to its fullest advantage. In 1943, 1,250,000,000 yards of cotton cloth went into bags, with the army alone using 11,000,000 bags for beans and peas, 87,000,000 bags for flour, and similar quantities for sugar, salt, potatoes and meal. With the continued growth of the nation's army, and the transfer of more men to overseas posts, this demand will increase, the council added, pointing out that an army of 7,000,000 men, half of whom are overseas, requires approximately 150,000,000 cotton bags annually as food containers.

The program to encourage greater use of cotton bags by consumers—worked out jointly with the Textile Bag Manufacturers Association—includes a concentrated advertising and publicity campaign designed to show housewives how to make many useful and attractive articles out of cotton bags. A 32-page pattern book, featuring articles that can be made from bags, is being offered free to housewives through advertisements in nine farm magazines, six teacher publications, and approximately 2,800 small town weekly newspapers. A series of news features entitled "Bag of Tricks for Wartime Sewing," and inviting readers to write for copies of the book, also is being published in approximately 1,000 newspapers. Focusing the attention of Washington officials on the part cotton bags are playing in the war, a series of four advertisements is being presented in the Washington Post, based upon cartoons drawn by the Quartermaster Corps to show many of the military uses of bags.

The program is expected to result in a sharp increase in reuse of cotton bags as a conservation measure, as well as increased consumer interest in products packaged in cotton bags.

—BREAD IS THE STAFF OF LIFE—

NONENRICHMENT CHARGED TO 12 ST. LOUIS BAKERS

CHICAGO, ILL.—Twelve St. Louis bakers have been charged by the War Food Administration with violating War Food Order No. 1, on account of their failure to enrich white bread in the manner required by the provisions of the bakery products order.

The warning was in the form of letters sent to the bakers by George Livingston, chief of the compliance division, Midwest region, of the Office of Distribution, WFA. In the letters, the bakers were told that if they fail to live up to the provisions of the food order by enriching the bread to the extent required under the U. S. Food, Drug and Cosmetic Act, they will be subject to penalties, which is a year in jail or a $10,000 fine or both.

Laboratory tests disclosed that the white bread made by the 12 bakeries was lacking in vitamins and minerals required under the bread enrichment program, according to Mr. Livingston's letter.

—BREAD IS THE STAFF OF LIFE—

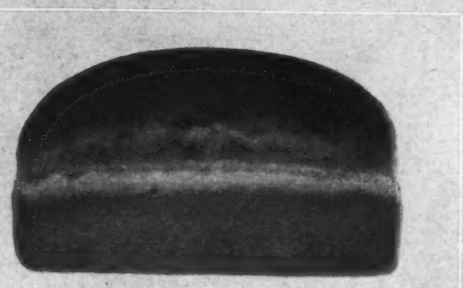
GOLDEN WEDDING CELEBRATION

GREEN LAKE, WIS.—William Widlake, pioneer Wisconsin miller, and Mrs. Widlake recently observed the golden anniversary of their marriage which took place in New York City May 28, 1894. Mr. Widlake, who served his apprenticeship as a miller in England, began to work in Wisconsin mills in 1900. Since 1904 he has operated the old mill on the Puckyan River which was built in 1848. This mill still grinds its flour products by means of great round millstones, with the original stones still in use. Mr. Widlake is one of the state's most expert men in the operation of such a mill, and is also one of the few remaining millers who is an expert at dressing millstones.

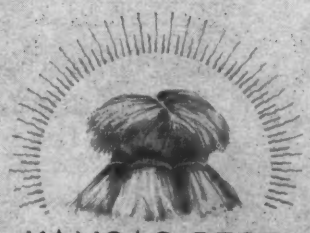
SETTLEMENT COMMITTEES CHOSEN

PHILADELPHIA, PA.—Philip R. Markley, president of the Commercial Exchange of Philadelphia, has appointed the following settlement committees to serve during the balance of the year: wheat—Raymond J. Barnes, William B. Stites, Charles I. Rini, Walter K. Woolman and P. W. Markley; corn—Philip R. Markley Albert L. Hood, Filson Graff and Charles I. Rini; oats and barley—Walter K. Woolman, William C. Walton, Albert L. Hood, Harry M. Edenborn, Jr., Monroe A. Smith and Harry E. Cassel.

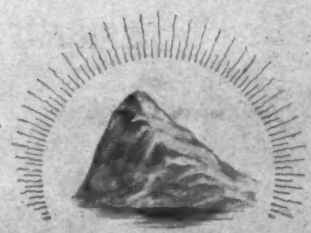
Be Proud of Your Job,
As We are of Ours...
for



Bread is the Staff of Life



KANSAS BEST
FLOUR



GIBRALTAR
FLOUR

The
CONSOLIDATED FLOUR MILLS CO.
KANSAS' LARGEST INDEPENDENT MILLERS
IN THE HEART OF KANSAS
WICHITA, KANSAS

IT'S IN THE RECORD
with
Robin Hood FLOUR
Laboratory Control
Uniformity
Performance

CANADIAN SPRING WHEAT FLOUR

ROLLED OATS

OATMEAL

Robin Hood Flour Mills Limited

Mills and Sales Offices: VANCOUVER · CALGARY · MOOSE JAW · SASKATOON WINNIPEG · TORONTO · HUMBERSTONE · MONTREAL · MONCTON
EASTERN EXPORT OFFICE: MONTREAL · ORIENTAL EXPORT OFFICE: VANCOUVER

SPILLERS LIMITED

Millers of the
HIGHEST QUALITY FLOUR
and Manufacturers of
PROVENDER AND BALANCED RATIONS
FOR ALL CLASSES OF FARM STOCK

Head Offices: 40, St. Mary Axe, E. C. 3. LONDON, ENGLAND
Cables: "Milligroup" London

LAKESIDE MILLING COMPANY, Ltd.
"BLOSSOM *of* CANADA" "YORK" "NORDIC"
Cable Address: LAKESIDE TORONTO, CANADA

Canadian Hard Spring Wheat
450 Elevators in Manitoba, Saskatchewan and Alberta.
High Test Country Run
United Grain Growers, Ltd. Winnipeg, Manitoba

Export Flour INSURANCE
"All Risks"
Special Service to Flour Mills on Export and Domestic Ocean and Lake Insurance and Transportation
Thirty-Five Years' Experience in Export Flour Handling
Western Assurance Company
TORONTO, CANADA
F. C. THOMPSON CO., LTD.
Canadian Agents
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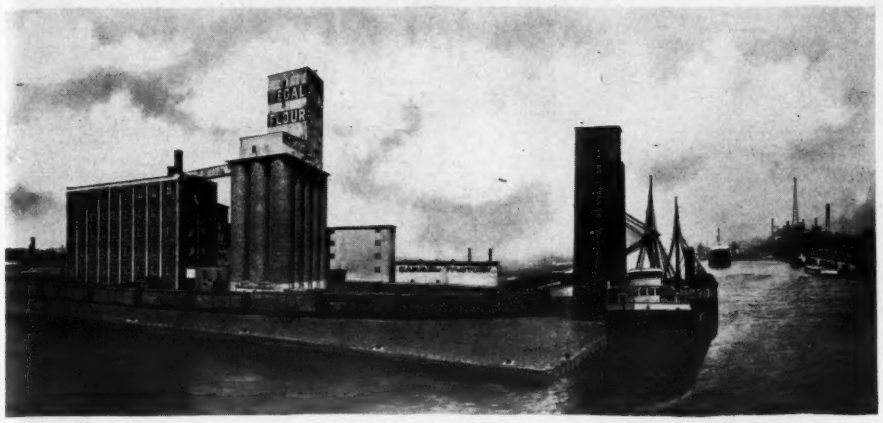
APPLETON & COX, INC.,
American Agents
111 John Street, New York

R. C. PRATT
Exporter
FLOUR, CEREALS, FEEDS
68 King Street, East
TORONTO, CANADA

MUNGO SCOTT, Pty., Ltd.
FLOUR MILLERS
Cable Address: "SUPERB"
Established 1894
Summer Hill, Sydney, N.S.W., Australia

The St. Lawrence Flour Mills Co., Ltd.

MONTREAL • CANADA



Millers of Canadian
Hard Wheat Flours

"Regal"
"Fleur de Lis"
"National"
"Daily Bread"
"Citadel"

Quality uniformly maintained for over 25 years

WESTERN CANADA FLOUR MILLS COMPANY LIMITED

CABLE ADDRESS: LAKURON — TORONTO, CANADA

SPECIALISTS IN MILLING

PURITY THREE STARS
STERLING CANADA CREAM

GREAT WEST • BATTLE • MAITLAND • HURON

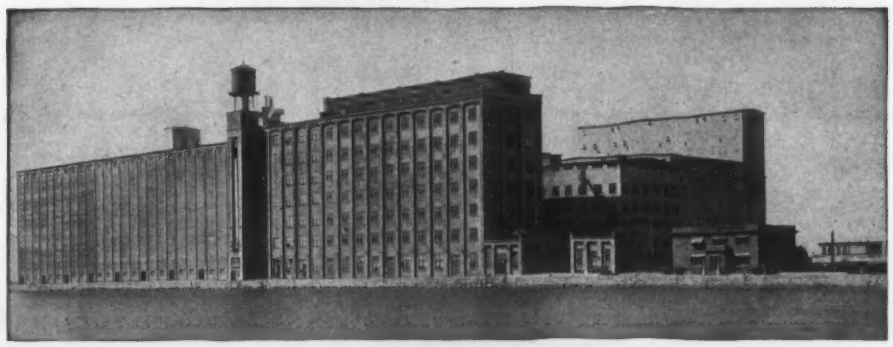
All Western Canada Hard Wheat Flours

FLOUR MILLING CAPACITY 9,500 BBLS DAILY — ROLLED OATS AND OATMEAL 400 BBLS DAILY

UNIFORM QUALITY GUARANTEED

CANADA'S LARGEST FLOUR EXPORTERS

Head Office— Toronto, Ontario



PORT COLBORNE MILLS—CAPACITY 12,000 BBLS. DAILY

Cable Address— "Mapleshaw," Toronto, Canada

Maple Leaf Milling Co. Limited.

EXPORT OFFICES: TORONTO NEW YORK VANCOUVER

MILLS AT

TORONTO, ONTARIO — MEDICINE HAT, ALBERTA — PORT COLBORNE, ONTARIO

CHOICEST CANADIAN *Hard Spring Wheat*

and perfect milling facilities have placed our products in the van.

BRANDS

"VICTORY" - "PRAIRIE BLOSSOM"
"WOODLAND" - - "HOMELAND"

THE DOMINION FLOUR MILLS, LTD.

Cable Address: "DOMFLOUR" MONTREAL, CANADA

JUTE BAGS COTTON

OLDEST ESTABLISHED MANUFACTURERS OF

JUTE **BAGS** COTTON

IN CANADA

Factories—MONTREAL - TORONTO

The CANADIAN BAG CO., Limited

Head Office: MONTREAL, QUEBEC

JUTE BAGS COTTON

Since 1857

James Richardson & Sons
LIMITED

Grain Merchants Shippers and Exporters

WINNIPEG · CANADA

Export Offices - MONTREAL and VANCOUVER

Cable Address: "JAMESRICH"

COATSWORTH & COOPER
LIMITED

C A N D

Grain and Feeds

Exporters

TORONTO, CANADA

TORONTO ELEVATORS LIMITED

Grain and Feed Merchants

4 Million Bushel Elevator—Toronto
3 Million Bushel Elevator—Sarnia

TORONTO, CANADA

QUALITY UNIFORMLY MAINTAINED SINCE 1887

Lake of the Woods Milling Co., Limited

Cable Address
"HASTINGS"
Montreal

LAKE OF THE WOODS MILLING COMPANY LIMITED CANADA

ALL
CABLE CODES
USED

Makers of CANADIAN HARD SPRING WHEAT *Flour*

Owning and Operating
Wheat-Receiving Elevators in Manitoba, Saskatchewan and Alberta

Mills at
Brantford, Keewatin, Medicine Hat

HEAD OFFICE: MONTREAL

WESTERN OFFICE: WINNIPEG

Offices:

TORONTO, OTTAWA, QUEBEC, ST. JOHN, N. B., HALIFAX, HAMILTON, BRANTFORD, SUDBURY, LONDON, SAULT STE. MARIE, FORT WILLIAM, KEEWATIN, MEDICINE HAT, PORTAGE LA PRAIRIE, CALGARY, MOOSE JAW, REGINA, EDMONTON, VANCOUVER, VICTORIA

Per Capita Civilian Food Consumption to Remain Unchanged

WASHINGTON, D. C.—Per capita civilian food consumption in 1944 is expected to average substantially the same as last year, despite the use of about 25% of the total food output to meet war requirements, according to a report by the department of agriculture.

In 1943 the prewar (1935-39) level of civilian food consumption was exceeded by 6% as the result of record food production. At the same time, over one-fifth of the total food output went for military and lend-lease purposes. During the first four months of 1944, the rate of civilian consumption has been somewhat higher than it averaged in 1943.

Prospects for civilian food supplies in the next few months are relatively good. During the spring and early summer, potatoes and eggs will continue to be abundant. Supplies of fresh vegetables and citrus fruits will be relatively large. Civilian supplies of cheese, chickens, and most fats and oils including butter, are expected to be larger in the next few months than in the earlier months of 1944.

Civilian per capita consumption of meat in the first half of 1944 is expected to be at the annual rate of about 155 lbs. This unusually high rate of consumption is due to record production, and to shipping and storage difficulties. For the year 1944 as a whole, civilian meat consumption will apparently be around 145 lbs per capita, 8 lbs higher than the revised estimate of 137 lbs per capita for both 1943 and 1942.

Although the seasonal decline in egg supplies has begun, eggs remain plentiful. Market supplies of chickens are increasing seasonally and during the next four or five months probably will exceed the 1943 record supplies for the same months. In the last few months of 1944, civilian supplies will be reduced because of smaller total marketings and heavy military takings.

Prospects for total milk production have improved recently. The civilian supply of all dairy products in 1944 may approximate that of 1943. Butter supplies are expected to be larger, supplies of fluid milk will remain about the same, while cream, cheese, and condensed and evaporated milk are likely to be somewhat smaller for the year as a whole. The civilian supplies of food fats and oils in the aggregate for 1944 may be approximately the same as those of the year before, with somewhat more lard, butter and margarine but less of the other fats and oils products. Currently, civilian supplies of all fats and oils are larger than at any time since early last summer.

Indications are that civilians will have at least as large a total supply of fruits and vegetables as last year. Marketings of fresh fruits and vegetables continue large. War requirements for canned fruits and vegetables are very heavy. Prospective reductions in civilian supplies of the commercial canned goods amounting to 15 or 20% for the year are likely to be offset by large fresh supplies, particularly in the case of vegetables.

Prospects for the winter wheat crop have improved. The 1944 winter wheat crop is now expected to reach 602,000,000 bus, 72,000,000 more than in 1943.

A new development which greatly extends fermentation tolerance. Provides more time for "cutting over" or giving dough extra punches. If you want a flour which will stand abuse, write or wire

NEBRASKA CONSOLIDATED MILLS COMPANY
1521 N. 16th St. OMAHA, NEBRASKA

A New Brand on the Milling Horizon

BIRCHMONT

Typically Minnesota—a short patent that will stand comparison

— and —

WHITE GOLD
(Standard Patent)

ST. CLOUD MILLING CO.
ST. CLOUD, MINNESOTA
300 Bbls Capacity

"Hunter's CREAM"

A Kansas Turkey Wheat Flour

that for more than sixty years has stood at the very top of the fine quality list.

The Hunter Milling Co.
Wellington, Kansas

W. S. KIMPTON & SONS
Flour Millers
MELBOURNE, AUSTRALIA
Cables: "GLUTEN," Melbourne

GILLESPIE BROS., Pty., Ltd.
FLOUR MILLERS
SYDNEY, N.S.W., AUSTRALIA
CABLE ADDRESS, "GILLESPIE," SYDNEY

BY APPOINTMENT TO HIS LATE MAJESTY KING GEORGE V.

Canada's oldest and largest Millers

BRANDS:

Flour

"ROYAL HOUSEHOLD"
"GLENORA"
"FAMOUS"
"BUFFALO"

Cereals

"OGILVIE OATS"
"WHEAT HEARTS"
"OGILVIE BLENDIES"

THE OGILVIE FLOUR MILLS COMPANY, LIMITED
HEAD OFFICE, MONTREAL, CANADA
Mills at:
Montreal, Fort William, Winnipeg, Edmonton and Medicine Hat
Cable Address: OGILVIE, MONTREAL. All codes used.

GREAT STAR FLOUR MILLS, Ltd.
Successors to Wolverton Flour Mills Co., Ltd.
Canadian Spring and Winter Wheat Flour
"SILVERKING" "GREAT STAR" "WOLF" "KEYSTONE"
Cable Address: "WOLMACO" ST. MARY'S, ONTARIO, CANADA

CANADIAN-BEMIS BAG COMPANY, LIMITED
WINNIPEG • VANCOUVER
Successors to
THE CANADIAN BAG CO. LIMITED OF WINNIPEG & VANCOUVER
and
BEMIS BRO. BAG COMPANY, WINNIPEG
Manufacturers and Importers

COTTON BAGS

JUTE BAGS

BURLAPS AND TWINES
Paper Bags for Sugar, Cereals, etc., manufactured at Vancouver plant

WESTERN STAR
KANSAS STAR
GOLDEN CREST

★ ★ ★

Each of these three fine bakery flour leaders comes from the same country wheat, is milled with the same exacting precision, is built for a particular purpose. There is no second choice among them—each is designed for a special need.

★ ★ ★

The WESTERN STAR MILL CO.
SALINA, KANSAS

Coast To Coast Grain Service

CARGILL
INCORPORATED

Minneapolis and All Principal Grain Markets

WHEAT
WINTER
SPRING
DURUM
• • •
By the
TRUCK-LOAD
CAR-LOAD
BOAT-LOAD
• • •
Any Where
Any Time

WHEAT

Any Grade—Any Quantity—Any Time

BUNGE ELEVATOR CORPORATION
MINNEAPOLIS, MINN.

"ROCK RIVER" RYE "OLD TIMES" BUCKWHEAT

"BLODGETT'S" RYE

All Grades—From Darkest Dark to the Whitest White
—Specially Milled by the Blodgett Family—Since 1849

FRANK H. BLODGETT, Inc., Janesville, Wisconsin

THE CAUSE

An embibing, stuttering man being brought by a constable before a magistrate, could only stammer, stutter and spew around.

The magistrate inquired of the constable what was the man charged with.

The constable replied: "He must be charged with soda water."

NONCHALANCE

A gangster rushed into a saloon shooting right and left, yelling, "All you dirty skunks get outta here!"

The customers fled in the hail of bullets—all except an Englishman who stood at the bar calmly finishing his drink.

"Well?" snapped the gangster.

"Well," replied the Englishman, there certainly were a lot of them, weren't there?"

DRYDOCK

During a conversation with a young lady a story says Mark Twain had occasion to mention the word "drydock." "Just what is a drydock, Mr. Clemens?" she asked.

"Ahem," replied the great humorist, "it's a thirsty physician."

A BIT DIFFERENT

"I knew an artist who painted a cobweb so realistically that the maid spent several hours trying to get it down from the ceiling."

"I just don't believe it."

"Why not? Artists have been known to do such things."

"Yes, but not maids."

ADVICE

Old Timer (to new boarder).—I wouldn't touch the rice pudding, old man. There was a wedding here yesterday.

NO ENEMIES

Nonagenarian.—I am dying without an enemy in the world.

Consoling Parson.—That is splendid, John, to have gone through life without making an enemy.

Nonagenarian.—No! No! Not that, parson. The So-and-So's are all dead.—*The Clipper.*

NEAT TRICK

Mister.—After the accident, did they have to put any stitches in?

Missus.—No, I just pulled myself together.

LOST

Mother (to young son).—Whose little boy are you?

Son (disgustedly).—Gosh! don't tell me you don't know.

SEVEN
Great Bread Makers
From Selected Spring Wheat

DULUTH UNIVERSAL
PRIDE OF DULUTH
DULUTH RELIABLE
PURE GOLD
FARM GOLD
APEX—Fancy Clear
RED INDIAN—First Clear

Try our high protein spring wheat Graham and Whole Wheat flours, Farina and Pure Wheat Germ.

Duluth Universal Milling Co.
DULUTH, MINN.

Igleheart Brothers, Inc.
Evansville, Indiana
MILLS STRATEGICALLY LOCATED IN THE CENTRAL WEST AND ON THE PACIFIC COAST
▼
Cracker, Pastry, Cake, Doughnut, Cone, Cookie And All Other Special Flours

Mother Hubbard Flour
FOR QUALITY, FLAVOR AND ECONOMY
Hubbard Milling Co.

GOLD KEY
A standard patent flour of high loaf volume, producing excellent flavor and texture—fairly priced.
WISCONSIN MILLING CO.
MENOMONIE, WIS.

WHITE WHEAT
Low Protein Cake and Cookie Flours
AMENDT MILLING CO.
Monroe, Mich.

Soft Cake Flour
For Biscuit Manufacturers
WATSON HIGGINS MILLING CO.
GRAND RAPIDS, MICH.

The Williams Bros. Co.
Merchant Millers KENT, OHIO, U.S.A.
Specialists Ohio Winter Wheat Flour
All our wheat is grown on "Western Reserve" and bought from the growers at elevators we own and operate.

The Moundridge Milling Co.
FAMILY FLOUR — BAKERY FLOUR
CRACKER FLOUR
SPECIALTY PRODUCTS
General Offices: MOUNDRIDGE, KANSAS

REPRESENTATIVE FLOUR IMPORTERS OF FOREIGN COUNTRIES

R. HUNTER CRAIG & CO., Ltd.

GLASGOW: 45, Hope Street, C.2. LIVERPOOL: Temporary War-time Address "Copley," Thornton Hough, Cheshire

LONDON—7, London Street, Mark Lane, E. C. 3.

M. STANNARD E. A. GREEN
Established 1870
STANNARD, COLLINS & CO.
FLOUR, GRAIN AND CEREAL PRODUCT IMPORTERS
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Cable Address: "DORFEACH," London
MARDORF, PEACH & CO., Ltd.
FLOUR IMPORTERS
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COVENTRY, SHEPPARD & CO.
FLOUR IMPORTERS
17, Corn Exchange Chambers LONDON, E. C. 3
Cable Address: "COVENTRY," London

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(CHAS. E. FEAST)
FLOUR IMPORTERS
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FLOUR IMPORTERS
LONDON, LIVERPOOL, BRISTOL, DUBLIN, BELFAST

HARRIS BROS. & CO. (Grain) Ltd.
COMMISSION AGENTS and FACTORS
GRAIN, SEEDS, OIL, FEEDINGSTUFFS and FLOUR
Corys' Buildings
57/59 St. Mary Axe LONDON, E. C. 3
9 Brunswick Street LIVERPOOL
68 Constitution Street LEITH
81 Hope Street GLASGOW

CRAWFORD & LAW
FLOUR IMPORTERS
50 Wellington Street GLASGOW, C. 2
and at 27, Corn Exchange Chambers LONDON, E. C. 3
Cable Address: "CAMELLIA," Glasgow

Cable Address: "TRONTOPRI," London
SIDNEY SMITH
(FLOUR, FEED & GRAIN, LTD.)
52 Mark Lane LONDON, E. C. 3
FLOUR, GRAIN, FEED, CORN AND CEREAL PRODUCTS
Codes: Riverside, A B C 5th Ed., also Bentley and Western Union 5 Letter Codes

ROBERT CARSON & CO.
LTD.
FLOUR IMPORTERS
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Cable Address: "DIPLOMA," Glasgow

ANDREW TAYLOR & CO.
(GLASGOW) LTD.
FLOUR IMPORTERS
163, Hope Street, GLASGOW
Cable Address: "GOLDENGLO," Glasgow.

WILLIAM MORRISON & SON
LTD.
FLOUR IMPORTERS
Baltic Chambers
50 Wellington Street GLASGOW
Cable Address: "WAVERLEY"

FARQUHAR BROTHERS
FLOUR MERCHANTS
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C. I. F. business much preferred.
Cable Address: "GLENCAIRN," Glasgow

FENNELL, SPENCE & CO.
IMPORTERS OF GRAIN, FLOUR, LINSEED AND COTTONSEED PRODUCTS, FEED, ETC.
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Cable Address: "FENNELL," Liverpool

McCONNELL & REID, LTD.
FLOUR IMPORTERS
19 Waterloo St. GLASGOW
Cable Address: "MARVEL," Glasgow

WATSON & PHILIP, LTD.
FLOUR IMPORTERS
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41 Constitution St., LEITH
Esplanade Buildings, DUNDEE
42 Regent Quay, ABERDEEN
Cables: "PHILIP," Dundee

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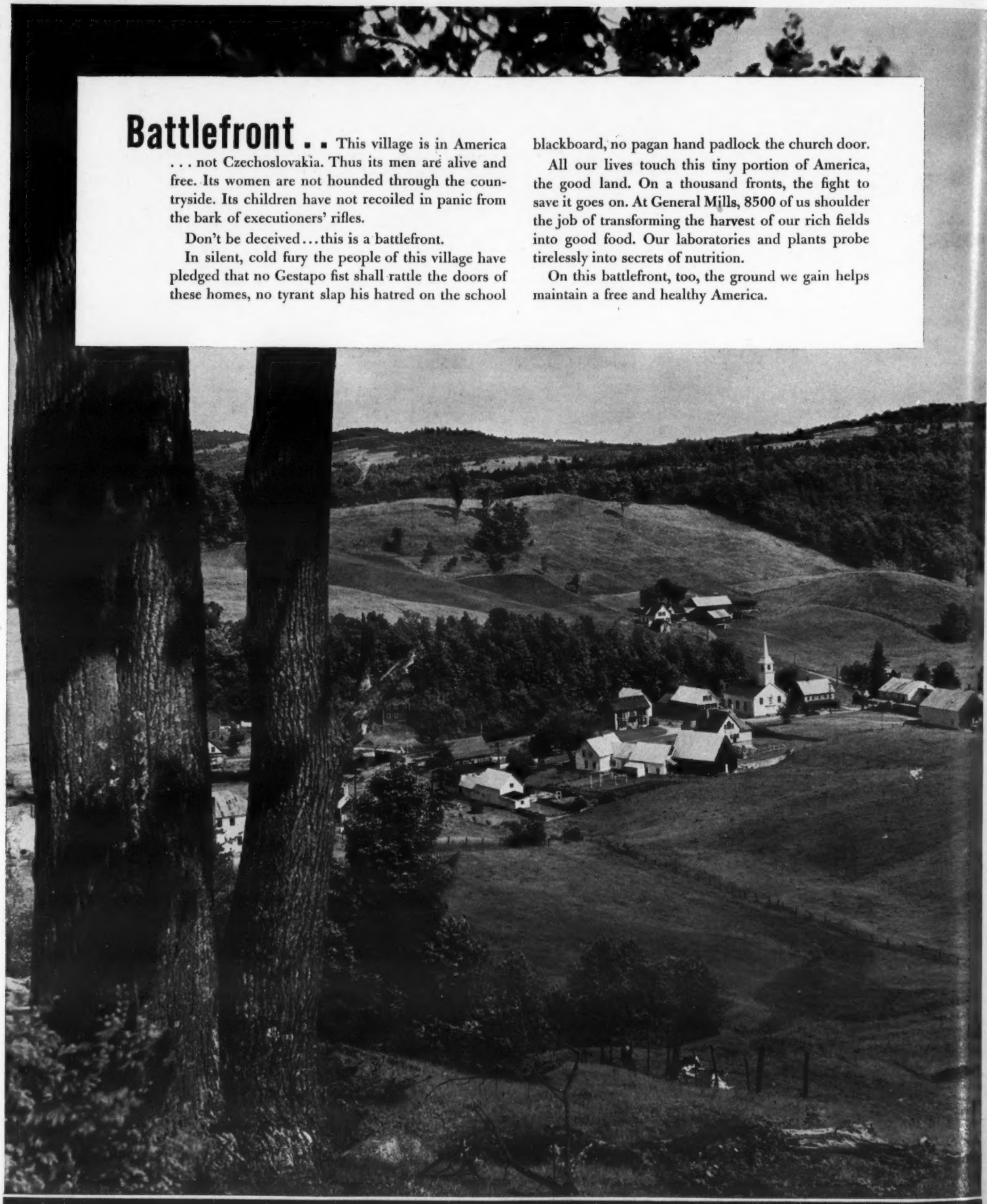

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